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ORIGINAL PAPERS.

ON THE PRACTICAL ASPECTS OF DORSAL PERCUSSION AND IN PARTICULAR OF THE PERCUSSION OF THE SPINE.[1]

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THORACIC surgery, in order to keep up its present rate of progress, must be more and more dependent upon accuracy of diagnosis, and dorsal percussion, and particularly spinal percussion, may, in this sense, be regarded as more specially of use to surgeons. The services which it may render to them are likely to be identified, as indicated in an earlier communication,[2] with diseases of the spine and with prevertebral affections, both thoracic and abdominal. But with these the physician is also concerned, no less than with a more complete determination of the size of the intrathoracic organs, and it often rests with his diagnosis to provide that early opportunity for surgical treatment which is essential to surgical success. Nowhere is this more true than with affections of the posterior mediastinum, an early recognition of which is a duty for surgeons and physicians alike.

The fact that dorsal percussion has been persistently ignored can no longer be used as a practical argument against its being systematically taught. Radioscopy, coming at a time when the present studies had already reached an advanced stage, almost seemed to have rendered them superfluous; but, on the contrary, by stimulating our curiosity as to the normal and the pathologic conditions in the depth of the thorax, it has broken the spell of prejudice, and encouraged a ready method which

[1] A paper read before the Cambridge Medical Society, London, June 2, 1899, by Wm. Ewart, M.D. Cantab., F.R.C.P. London. From the author's manuscript furnished the INTERNATIONAL MEDICAL MAGAZINE. Its publication has been delayed by the failure of the electrotypes to arrive on time.

[2] "The Diagnostic Uses of Percussion of the Vertebral Spines, with General Remarks on 'Pleximetric' Bones and Viscera."—*The Lancet*, July 2, 1898.

is capable of yielding data sometimes more definite than those of the more complicated, difficult and expensive method of Röntgen.

I will not attempt the entire subject of dorsal percussion to-day, but confine myself to the more essential points relating to the thoracic organs.

Dorsal percussion implies some exertion, and some pain to the percussing finger. (To obviate this, I constructed, some years ago, an ebony thimble open at both ends and with flat sides; it answered the purpose well, but I fell more and more into the use of Sansom's plexímeter, which is difficult to improve upon.) Moreover, the results of dorsal percussion, unless it be performed with skill and with the help of a plexímeter, are not sufficiently telling to lead to its persevering study. This may explain its having been neglected—I might have said forgotten—for it is not a new method, and some of the results which I have to lay before you are not new. Piorry, whose publications ranged from 1826 to 1866, devoted that long period to the study of plexímetry, but, owing partly to a bizarre nomenclature, partly to an over-zealous advocacy, he failed to secure for his methods and for his facts the appreciation of his contemporaries, and his results remained unknown to me until I had independently worked out my own on slightly different lines.

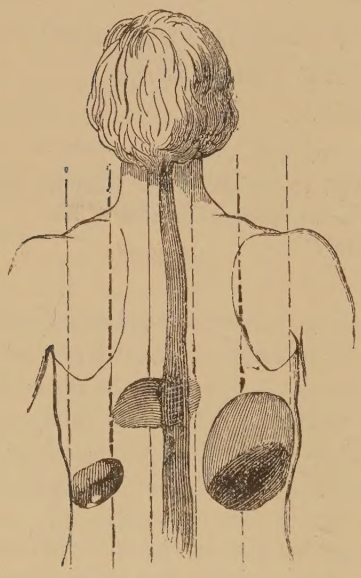

FIG. 1.
Piorry's original diagram ("Traité de Plessimétrisme," p. 248, 1866). The lines were used as guides for his percussion.

The gradual stages through which the present results have been reached need not be detailed. The fact that they were obtained by percussion, and only subsequently verified anatomically, speaks well for the capabilities of percussion. We cannot, however, turn dorsal percussion to practical account, clinically, without a definite knowledge of the underlying anatomy, of the results normally obtained by percussion, and of the methods to be employed.

The Anatomical Relations.

The Lungs and their Lobes.—If the dorsal spine and the ribs be removed from the back in the dead body, lung tissue only comes into view on both sides of the chest, though the pulmonary fringe (which during life extends to the twelfth rib) may, by its retraction, allow a small surface of the liver and spleen to protrude under cover of the diaphragm, below the tenth rib.

The left interlobar septum (Fig. 2) is seen to rise to the level of the third spine, the less steeply inclined right septum not rising above the fourth.

The Aorta, Esophagus, Trachea, and Bronchi.—It is important to bear in mind that the aorta remains well to the left, the esophagus well to the right of the middle line, so that when the spinal column is removed in the dead body they are seen to lie parallel to each other, side by side. The trachea, covered from behind by the esophagus, is not median, but decidedly lateral in its intrathoracic course, slanting from the middle line which it occupies higher up toward the right, so that its angle of bifurcation is outside, or almost outside, the lateral line of the vertebral bodies. This I have verified by transfixing the costal interspace from behind close up to the vertebral column at the level of the fifth dorsal spine. The probe passed through the summit of the angle and perforated the infratracheal gland.

This lateral slant of the trachea has been previously described by Joseph A. Blake, of New York, and demonstrated by the Röntgen rays.[3] It probably explains better than anything else the greater frequency with which foreign bodies drop into the right bronchus. The left bronchus has thus to cross the width of the spinal column.

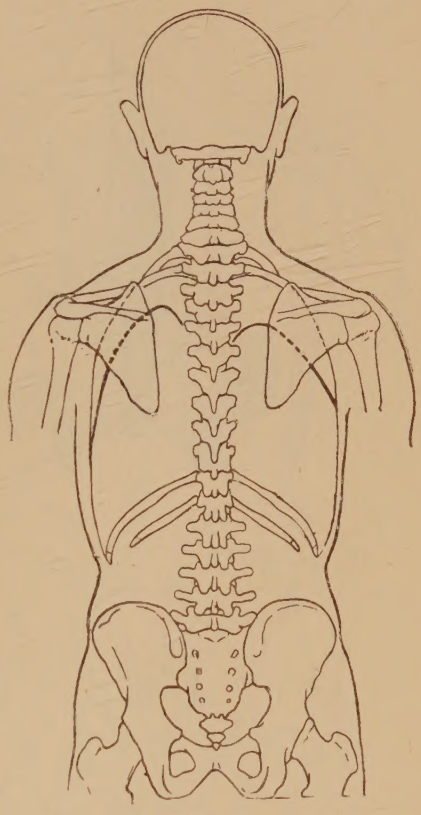

FIG. 2.

Showing the relations of the dorsal spines to each other, to the ribs, and to the scapulæ. The difference in level and in shape between the right and the left lower lobes is indicated.

The Pericardium.—The aorta having been raised, as well as the esophagus, the *pericardium* is exposed, and within it may be seen, beneath the horizontally placed right pulmonary artery, the posterior surface of the left auricle, which extends a little more to the right of the spine than to the left at the level of the eighth and ninth spinous process. The auricle thus lies immediately in front of the spinal column, the aorta and esophagus only intervening.

The right auricle does not reach this posterior plane, and only by hold-

[3] "The Relation of the Trachea and Bronchi to the Thoracic Walls, as Determined by the Röntgen Rays," by Joseph A. Blake, M.D., New York.

ing the right lung aside can it be seen, as the thin edge of a wedge, presenting the well known convex outline toward the right.

The posterior surface of the diaphragm conceals from view the abdominal viscera, which do not concern us to-day.

The Spines in Relation to the Bodies of the Vertebrae.—In determining the levels corresponding to various structures, the varying degree of imbrication of the spinous processes must not be overlooked (cf. Fig. 2). This imbrication is most marked at the middle third of the dorsal spine, but elsewhere the vertical distance between the spinous process and the axis of the corresponding vertebral body is less considerable. The fifth dorsal spine is situated in the adult about one inch below the equator of the fifth vertebra. This spinous process can be readily found by percussion, and enables us to identify also the adjoining spines. We should note that the twelfth dorsal spine lies below the level of origin of the twelfth rib, whilst the first dorsal spine corresponds closely to the level of origin both of the first and of the second ribs. The twelfth rib is easily identified by feeling its extremity in the back, the tip of the eleventh rib being perceptible only from the front. The scapula is generally said to extend from the level of the third spine to that of the seventh spine.

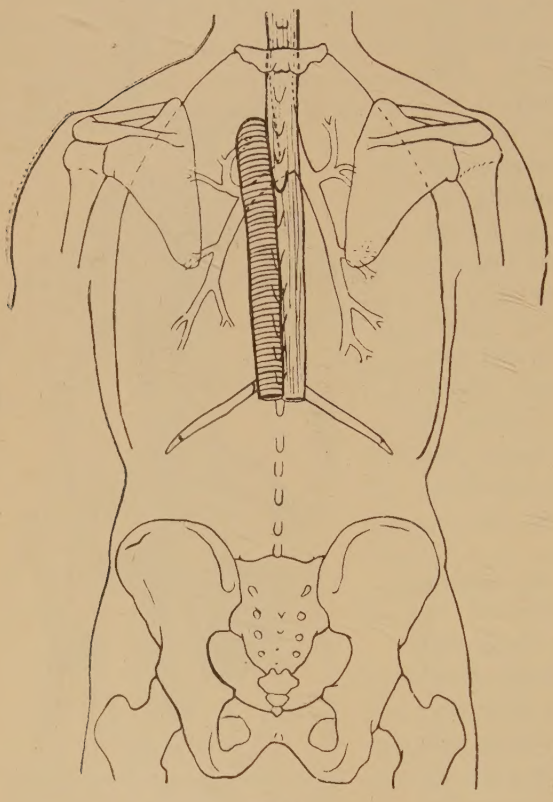

FIG. 3.

The aorta, the esophagus and the trachea viewed from behind in their mutual relations. The bifurcation of the trachea is shown to be entirely to the right of the middle line.

The Methods.

The auxiliary methods of auscultatory percussion and of auscultatory friction are not of service in the back, and the latter method is not available, owing to the viscera being covered by the lung. Ordinary percussion is

used, with its various modifications as regards strength. *Immediate* percussion is available only over bony prominences—such as the dorsal spines, the spinal process of the scapula, the acromion, and the head of the humerus; but the finger or the plexímeter may be interposed. A special feature of the *mediate* percussion required elsewhere in the back is the considerable pressure wanted on the part of the applied finger or plexímeter, the percussion stroke itself being either light or heavy, according to needs. If a Sansom's plexímeter be used, this should not be of slender make, or it will break under the pressure applied to the hard muscles of the back. The *plexímeter* is of great help in accentuating the partial dullness in the back, and in sharply defining their outlines. I am an advocate for training the finger to the finest work, but though it is capable of verifying the outlines arrived at by the plexímeter after these have been mapped out, I doubt whether it could have led to their original determination. It is, perhaps, because for a long period the plexímeter had ceased to be used, that Piorry's results have been disregarded and dorsal percussion has practically remained since his time in abeyance. Much of our percussion, even when we use the finger only, and particularly when we employ immediate percussion over a bony surface, is essentially pleximetric, as will be explained in connection with Spinal Percussion.

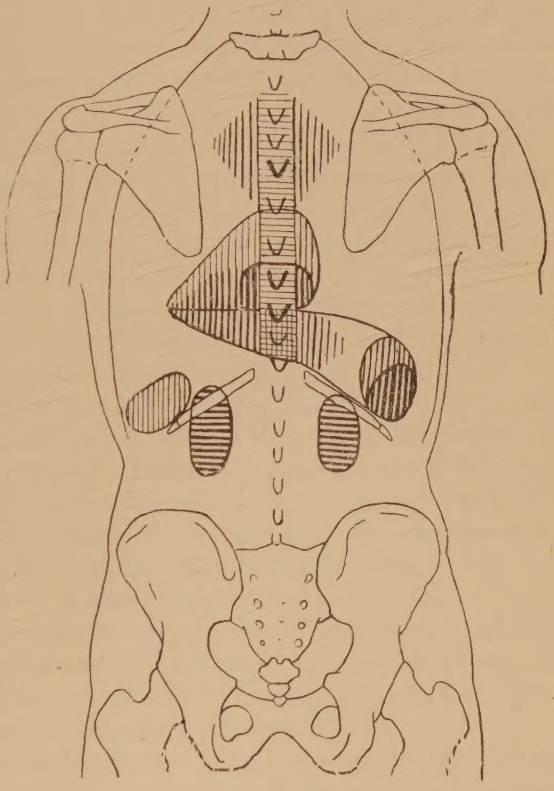

FIG. 4.
The dorsal percussion map. N. B. The post-cordial dullness includes the smaller and more marked "left auricular dullness." "Piorry's nucleus" of hepatic dullness is seen to the right, the splenic dullness to the left.

The Fundamental Principles of Plexímetry.

1. Every plexímeter has a note of its own.

2. This individual note, which adds itself to the transmitted notes, is usually of high pitch and will intensify any slight dullness; and these are thus rendered quite obvious. Hence the great advantage of the pleximeter in analytical percussion.

3. An isolated pleximeter tends, when percussed, to give a uniform note in whichever part it be struck.

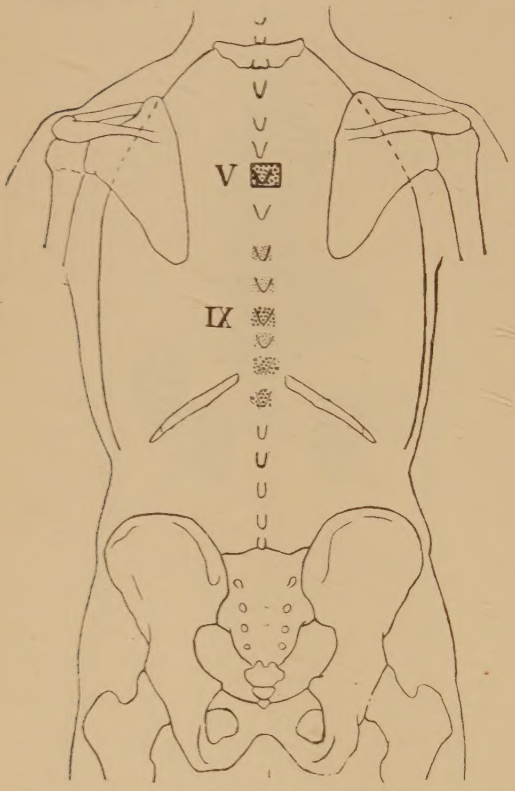

FIG. 5.

Showing the dull vertebrae: at V. the "Fifth spine dullness"; at IX. the auricular dullness of the ninth spine, above which the heart and below which the liver give rise to a partial loss of resonance of the corresponding spines.

4. It also tends to transmit by conduction over its whole surface that quality of sound which predominates in contact with any considerable part of it. In this way slight local dullnesses may be submerged in a prevailing resonance.

5. Nevertheless, a large pleximeter in its different parts will be capable of yielding different values of sound, according to the underlying material.

6. Every rib and bone in the chest capable of being percussed is a pleximeter with a note of its own, which modifies that of the vibrations it may transmit.

7. On the other hand, pathological changes within the bone itself may greatly modify the note which it would yield normally. This is of diagnostic value.

In illustration of the foregoing, if a Sansom's pleximeter be held up and percussed in the air, it yields a high pitched, though feeble, sound. Let us now take a lumbar vertebra; this, also, when percussed, will give a sound of its own. These two bodies are indeed similar in their general constitutions. They both consist of a *stem* (which, in the vertebra, is double), uniting a small surface or *knob* with a larger *sound-collecting surface*—in the case of the vertebra a very large and convex one. Thus, whenever we percuss a spinous process, we are using a typical pleximeter; and, by its

means, we can sound considerable depths within the chest, in the same way as Sansom's pleximeter deals with its surface.

This other vertebra, which I now percuss, has an obviously different sound. I have caused wax to be run into its cancellous tissue, as a coarse analogy to those pathological infiltrations which may sometimes modify the vertebral note.

Again, this scapula has a note of its own. As I have pointed out elsewhere,[4] the scapula is a huge pleximeter. When we percuss the acromial extremity of its spine, we obtain a fully resonant note in spite of the distance intervening between it and the lung, and in spite of its solid surroundings. The whole scapular surface is more resonant, although it has a heavy muscular investment, than the neighboring pulmonary surfaces, comparatively thinly covered and accessible to more direct percussion.

When pleuritic effusion rises high enough in the chest, dullness may be taken up and conveyed by the scapula beyond the actual site of the fluid, and the same is true of large subscapular consolidations. Nevertheless, fractional dullnesses of small size, such as those due to broncho-pneumonia, may, with care, be picked out over limited districts of the scapula.

In percussing the vertebra we are practising pleximetry, the spinous process or thin end of the pleximeter being within reach of percussion, whilst the broad vertebral end is in contact with resonant structures. And over the vertebral groove on either side of the spines, but for the interposition of the thick muscles which fill the vertebral groove, the same degree of resonance would obtain as over the spines themselves.

The Normal "Dorsal Percussion-map."

The anterior thoracic percussion areas are now well known, and they are mapped out by every student, as the "precordial dullness, the prevascular or retrosternal dullness, the hepatic dullness, the splenic dullness, and, lastly, the gastric semilunar areas of resonance, or Traube's area."

A knowledge of the normal distribution of resonance and dullness in the back is equally necessary for the diagnostic purposes of percussion in disease. But a full description of the normal outlines of the resonant and of the dull areas in the back has hitherto been wanting, for Piorry's diagram is incomplete, and the student has not hitherto had a percussion-map to refer to. The accompanying diagram may supply that want. The dorsal percussion areas include three resonant, and four dull outlines, viz.:

(1) A median strip of spinal resonance, along the tips of the spinous processes; (2) lateral bands of vertebral resonance on either side of the spines, and (3) the scapular resonance; and, on the other hand, (4) the interscapular dullness; (5) the post-cordial dullness; (6) the post-hepatic dullness, and (7) the post-splenic dullness.

The terms "post-cordial," "post-hepatic," and "post-splenic" dullness

[4] *The Lancet*, July 2, 1898.

seem to be conveniently short and clear. They may be worth adopting; at any rate they will serve the purpose of this description.

All these local modifications of the thoracic percussion note are relatively unobtrusive. It is quite possible for a rapid and rather bold percussion to leave them unperceived; that is, disguised by the general dorsal resonant note which is so powerful in health. Or, again, if we be not careful, the muscular coverings may be an obstacle to our efficient percussion and set up spurious dullnesses. An attitude which will relax as many muscles as possible is essential; not only the arms but the elbows must be crossed in front and the head inclined. The absence of any major dullness, such as from fluid effusions or from pneumonia, will then be safely made out by two or three rapid strokes down the two sides of the chest. But the normal dullnesses we are now dealing with require careful percussion, and for the beginner some previous knowledge of their situation.

The Spinal Resonance.

The spinous processes are universally resonant, and spinal percussion is almost *sui generis* in the degree in which it illustrates the pleximetric principles. The spine is a pile of pleximeters along which a great deal of resonance is conducted vertically up and down the column, but each of which, as it possesses a sound-collecting surface, a percussion surface, and a rigid connection between them, transmits, when separately struck, vibrations limited to its own conduction. Piorry does not definitely refer to a systematic percussion limited to the tips of the spinous processes, but his diagrams represent the spine as a broad band of relative dullness. I have always found a resonant note both down the spines themselves and along the surface corresponding to the vertebral bodies.

The Lateral Bands of Vertebral Resonance.—Thus, while the subcutaneous position of the spinous processes gives us a *line of maximum resonance,* the pleximetric resonance of the vertebrae and of their transverse processes is perceptible on either side of the latter as a minor degree of resonance for a distance of fully one inch from the middle line. These two lines of resonance, the spinal resonance line and the lateral vertebral resonance, assert themselves at all levels and almost under any circumstances.

Any dullness situated across the middle line, whether due to normal or to abnormal conditions, would be modified or interrupted by the resonant lines in question. This is the case with the post-cordial dullness, which extends to the left and a little to the right of the strip of vertebral resonance, for we notice that this band of resonance modifies on either side of the middle line the cardiac dullness proper. The same is true of the post-hepatic dullness, and true also of the interscapular dullness.

Piorry, in spite of his life-long study of pleximetry, does not appear to have grasped these facts. His attention seems to have been concentrated

upon the relative dullness which is peculiar to bone; and, whilst recognizing the pleximetric function of bones, he does not make full use of a percussion of the vertebrae as a test for the condition of the surrounding viscera. He never refers to the vertebral column as being resonant, neither does he make any distinction between the line of the spines and the vertebral bands of resonance. On the contrary, he frequently alludes to the relative dullness of the spine, and the spine in his diagrams is shaded as though dull. Even in his later work (*"Traité de Plessimétrisme,"* Paris, 1866) he still describes a dullness of the spine. He devotes Chapter XIX. (pp. 484 to 519) to the study of spinal percussion; but this is almost purely a surgical study, devoted to the diagnosis by percussion of all kind of spinal rotations, curvatures and outgrowths, including abscesses. Thus he dwells upon the coarser changes in outline rather than upon any modifications that might have been traced in the percussion note of individual vertebrae as a result of disease.

The Percussion of Individual Spinous Processes.

If the pleximeter be made to slide down the spine from the nape to the coccyx, whilst the finger deals a succession of equal blows of medium strength, the resonance obtained will seem to be about uniform throughout. But when light strokes are used this resonance fluctuates as the pleximeter travels; the neck will be found resonant, the interscapular region less so, and there will be some imperfect dullness from the seventh to the twelfth spine. The lumbar region will also be resonant, as well as the sacral, but each with its own degree and quality of resonance.

Proceeding now to a careful percussion of each successive spine downward from the seventh cervical, we find no marked change until the fifth dorsal spine is reached. This spine is decidedly less resonant than those above and below it. It is an instance of an isolated dullness of one vertebra. This peculiarity will be dealt with below, under the heading of "Fifth Spine Dullness."

The next departure from a full resonance over the sixth and seventh spines corresponds to the post-cordial dullness.

Much more marked is the dullness of the eighth and ninth dorsal spines. This will be referred to again under the heading of "Left Auricular Dullness."

The tenth and eleventh spines are the seat of a modified dullness, varying with individuals, and doubtless connected with the presence of the liver. This dullness is most marked in children and in those who from weakness or any other cause do not make full use of their pulmonary bases. The twelfth spine, situated below the level of the head of the twelfth ribs, sometimes partakes slightly of this dullness.

The lumbar spines are habitually resonant and often tympanitic, according to the state of the bowels. The great influence of the latter rather

detracts from the usefulness of percussion for the diagnoisis of abnormal abdominal conditions, but the second lumbar spine is always relatively dull.

The sacrum is normally resonant, but dullness may arise from pathologic causes. There is, however, a very slight relative dullness about 2″ in length along the sacral spines, beginning just below the base of the sacrum.

The Interscapular Dullness.

This important area of relative dullness (cf. Fig. 4) is not indicated in Piorry's illustration (*loc. cit.*, p. 284), nor in his account of dorsal percussion.

The interscapular dullness comes out clearly with the use of the pleximeter, but not so easily with the finger. It is continuous in the middle line with the cardiac dullness, but at the sides there is an interval between them. Together they occupy almost the entire space between the posterior borders of the two scapulae, but they can be readily differentiated by their slightly different degrees of dullness, and this may account for the fact that though Piorry did not make out, or at any rate describe, the interscapular dullness, he gives us the cardiac. The interscapular dullness is bilateral and practically symmetrical; the cardiac bilateral but much more extensive to the left. I will now roughly sketch them out on the healthy subject (cf. Fig. 4).

The lozenge shape which we make out for the interscapular dullness is constant, because it corresponds to the anatomical arrangement of parts. The dullness is dependent upon the relative absence of the sonorous influence of the lung in the corresponding thoracic district. Both lungs present here an incisure into which from above and below enter various structures which, except the bronchi, are not in themselves resonant, but dull, *viz.*, blood vessels, lymphatics, glands, fibrous tissue, nerves, etc., in addition to the mediastinal contents. In other words, the lozenge shape is that of the pulmonary incisures.

Let us bear in mind the pervading resonance of the spine and vertebrae. This asserts itself here, as at every other level. Therefore, in percussing the interscapular or the cardiac dullness across the middle line from left to right, as we reach the posterior vertebral groove, the dullness will be modified by resonance, and yet more resonance will be got over the spines themselves, beyond which the vertebral subresonance again prevails, until beyond the spinal groove the average interscapular dullness is once more obtained. Precisely the same modifications are observed in the cardiac dullness right and left. The result is that the careful percussor will always notice an interruption of the interscapular and of the cardiac dullness by two lateral bands of subresonance as well as by the spinal line of clear percussion note.

The Post-Hepatic Dullness.

There is no difficulty in making out the entire outline of the liver in the back, and its shape is analogous to that of the anterior outline, tapering from the broad right end across the middle line to a point which lies im-

mediately below the other triangular dullness, that of the heart, and combines with it to form the broad apex which may be percussed out in any chest below the angle of the left scapula (cf. Fig. 4). Piorry was familiar with a portion only of the post-hepatic dullness, and as this part is, from a practical clinical aspect, the most important, it deserves special description.

Piorry's nucleus of hepatic dullness (cf. Fig. 1 and Fig. 4) corresponds to the back of the broad end of the right lobe. The figure given by Piorry is true to nature, and this can be readily verified. The nucleus is a large oval area occupying the right outer thoracic base and consisting of a crescentic area which is imperfectly dull on percussion, and the oval outline of which is completed outwards and below by a smaller oval nucleus of considerable dullness, corresponding to the extremity of the right lobe. Normally, the axillary base to the outer side of Piorry's nucleus is resonant. To its inner side forcible percussion will elicit a resonant note, but the outline of the liver can be traced, by more careful percussion, across the middle line and to the left.

The remainder of the post-hepatic dullness is bounded by a horizontal line above and by an oblique line passing from the pointed extremity of the left lobe to the lower border of the right twelfth rib. I have not made out two horizontal lines of hepatic dullness analogous to the anterior suprahepatic and hepatic lines, but one only, and immediately above this rises the cardiac dullness.

The degree of the dullness of this section is variable, and appears to be influenced by the state and size of the surrounding viscera, particularly of the lungs and stomach. In children and in those who, for some reason, do not expand the base of their lungs down to the level of the twelfth rib, the hepatic dullness associated with that of the solid viscera occupying the same level gives rise to much more marked dullness, and this dullness may also be recognized on careful percussion of the eleventh and twelfth spines. But in the healthy adult the dullness is trifling, both over the spinous processes and on either side, and requires careful percussion for its recognition.

The Post-Splenic Dullness.

Little need be said concerning this dullness, which, among those traced out by Piorry, is that which has perhaps been least forgotten. Its position is well known. It occupies the outer posterior base along the axis of the eleventh rib, and is almost contiguous with the dullness of the left kidney, from which it is separated by the tip of the twelfth rib.

The Post-Cordial Dullness.

Piorry was, so far as I know, the first to map out the post-cordial dullness, and he mapped it out, though not with complete accuracy, still, on the whole, correctly as to position and size. His diagram gives us the

normal distribution of dullness right and left of the spine, the mainly horizontal position of the elongated area, and the pointed extremity which ends close to the line of the inferior angle of the scapula. According to my own percussion (cf. Fig. 4), the post-cordial dullness represents an elongated triangular figure with its long axis extending horizontally by three-quarters of its length to the left of the middle line, and by about a quarter to the right; this end, which is somewhat rounded, being the base of the triangle. Vertically, this dullness covers nearly three spinous processes, viz., from the seventh to the tenth. For its detection careful percussion is needed, particularly as we approach the apex of the triangle; but once the outline is mapped out none can fail to verify its reality.

The dullness is not uniform over this area. Dwindling, of course, toward the apex, it becomes much more definite half way between the apex and the middle line, until we reach the vertebral groove where the subresonance mentioned above asserts itself. Beyond the middle line this subresonance is again present, and passes into the dullness of the broad end of the figure, the dullness not being quite so full as that on the left.

Then percussing the area from above downward we find a difference between the upper part and the smaller lower section of the triangle. And this is important. The same distinction may be made out when we percuss the corresponding spinous processes. For, although resonant like the rest to strong percussion, these spines are to a lighter percussion just slightly less resonant than the others, particularly the eighth and the ninth.

The division between the two sections is a line stretching horizontally across. We can follow it to the right beyond the dullness; and, as this may be seen by looking at the profile of the subject, it corresponds with the upper level of the liver. Returning now to the apex of the triangle, we find that its lower boundary follows an oblique line downward to the right and takes the exact direction of the inferior line of hepatic dullness as traced in the front.

Piorry gives us no indication of any hepatic dullness to the left of the middle line and, therefore, he probably included as part of the cardiac dullness pure and simple that which is a blended dullness of heart and liver. I refer to the lower part of the dull area on the left.

Passing now to the small area of cardiac dullness, occurring on the right of the middle line, we note its crescentic shape, the outer boundary working back to the middle line, precisely in the same way as this occurs anteriorly at the right inferior border of the cardiac dullness. And with the small end of the plexímeter we are able to trace a resonant interval between the horizontal hepatic line and the convex dullness in question (cf. Fig. 4).

The Practical Applications of Dorsal Percussion.

Of most interest *to the surgeon* is the percussion of the spine and of the interscapular dullness.

As regards *spinal percussion,* it has been made sufficiently clear that percussion of the vertebrae has two separate objects: (1) The recognition of any abnormal dullness, due to disease, of the vertebrae percussed, and (2) the detection of prevertebral affections by means of the dullness conveyed through the vertebra from aneurysms, tumors, inflammatory thickenings, abscesses, etc.

Spinal percussion has always been in use for the detection of local tenderness; I now venture to submit it to surgeons for the finer purposes of diagnosis by means of the tactile and auditory vibrations elicited, for it does not appear that this principle has been utilized as a systematic method of surgical examination. Percussion may become a valuable indication as to the soundness of individual vertebrae. This point is easily tested in common spinal disease. Should one or more vertebrae be infiltrated with pus or solid deposit the note will differ from that of adjoining healthy vertebrae. The percussion of the spine for the purpose of investigating spinal disease was advocated and practised by Piorry; but, as I have said, he seems to have made little use of the pleximetric office which it so well fulfils. On the other hand, he studied and described very fully the percussion values of the pelvic bones, a subject to which, as well as to that of lumbar percussion, I can only make a passing reference to-day.

For the physician spinal percussion is of great value, provided he has acquired a knowledge of the normal condition, viz., the resonance of the spine as a whole and the modified resonance special to individual vertebrae.

The *general* resonance of the spine is peculiarly persistent. The stronger the stroke, the more resonance we seem to obtain.

In percussing the spine of a vertebra, we are eliciting the resonance of portions of the lung or of the intestine which occupy an almost central position in the body, and cervical vertebra corresponding to the upper respiratory cavities, a dorsal vertebra lying buried in resonant pulmonary surroundings, a lumbar vertebra facing the resonant gut, and a sacral vertebra being connected with the resonant contents of the pelvis—everywhere the extensive convex surface of the body of the vertebra collects resonant vibrations. You will find, on percussing the spinous processes from one end to the other, that they are all practically resonant, and it is singular that Piorry's pleximetric percussions should have overlooked this most striking of all instances of the natural application of the principle of pleximetry.

We can now understand the difficulty with which the resonant spinal note is overcome by the dulling agency of pleuritic or peritoneal fluid effusions. A unilateral pleuritic effusion leaves the spine entirely resonant. In double pleuritic effusion, dullness is conveyed to the spine itself, and the same occurs in pericardial effusion over a limited area, although from a different cause.

The post-hepatic dullness and the post-splenic dullness should be worth studying on their own account; their percussion is a necessary part of any complete examination of these organs. I shall not enter into a description of the variations which occur in the normal outlines and of the diagnostic significance attaching to them, the subject of this paper being limited to the examination of the thorax. But these dullnesses have an indirect bearing upon the latter. By paying due attention to them mistakes are avoided which might occur from wrongly attributing the visceral dullnesses to pulmonary, pleural, or other complications. In our clinical examinations, so long as our percussion of the back is performed in a perfunctory fashion, the partial dullnesses in question do not interfere with our conclusion that the lung is practically sound and resonant down to the base. It is when accurate diagnosis is needed and the examination becomes more searching, as, for instance, when a little fluid or a slight consolidation is suspected, that we are apt to stumble across them and to put upon them sometimes a wrong construction. This undeserved result of zeal need never arise if sufficient experience of normal percussion be possessed by the observer. I have not infrequently witnessed it in connection with the post-hepatic dullness. Much more rarely have I known the normal post-cordial dullness to be mistaken for some pathologic change, and still more rarely have my pupils been misled by the normal interscapular dullness.

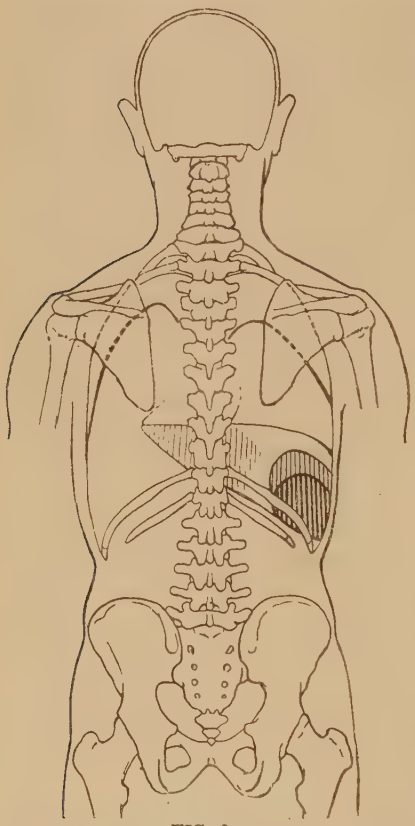

FIG. 6.
The conditions found in enlargement of the liver. Piorry's nucleus of hepatic dullness is no longer, as in health (cf. Fig. 4), isolated from but continuous with the anterior dullness.

But the post-splenic dullness and Piorry's nucleus may be mistaken for pulmonary consolidations or pleural exudates, but the central portion of the post-hepatic dullness is also concerned in the production of a dullness which is observed in connection with intrapericardial disease; but, sometimes, as in children or in wasted adults and in pregnancy, as a result of imperfect basic expansion of the lung.

The Lower Dorsal Dull Patch.

The subject of dorsal percussion would not be complete without some reference to the lower dorsal dull patch, which is one of the signs associated with pericardial effusion. Owing to the imperfect topographical data of dorsal percussion, it had not always been recognized or understood; but after these preliminaries I can approach its discussion with greater confidence. It is induced by the presence of fluid in the pericardium, but the dullness itself is not that of the fluid or of the heart, for it is situated below the level of both. The patient, with very large heart, now submitted to examination, does not present the dull patch, neither is it ever present as a result of simple cardiac enlargement.

Its level corresponds to that of the eleventh and twelfth spines. Its shape is quadrilateral, two-thirds at least to the left of the middle line, one-third or less to the right of the middle line. Its total transverse width five to six inches in large subjects, and its vertical diameter four inches at the most. It is, as you see, entirely below the level of the heart and pericardium. You will probably agree with my views that this dullness is that of the liver, often pancreas and other abdominal solids, usually well conducted to the back. It is not the dullness of pericardial effusion, for this would occupy a higher level, but it is the normal visceral dullness, intensified by the fluid spreading over the surface of the liver and acting upon its vibrations as a mute.

The interscapular dullness is one in which the surgeon and the physician are equally interested; and it corresponds to a variety of structures, each of which is liable to important diseases. Alterations in the shape and extent of this dullness may afford valuable information as to the conditions prevailing in the mediastinum. When the mediastinal structures are the seat of consolidation, or invaded by new growth, the vibration is no longer of the resonant kind, and dullness, or partial dullness, occurs over the spinous process on percussion. Diagnosis may, however, be pushed yet further, and alterations in the degree of dullness of the spines of individual vertebrae may call our attention to early changes in those structures which immediately underlie the vertebrae, such as the aorta, the esophagus and the lymphatic glands. It is, however, obvious that no use can be made of this method without a preliminary acquaintance with the percussion note, normally yielded by individual vertebrae. Among the latter I have recently found that there is one which is differentiated from all others by its partial dullness.

The Fifth Spine Dullness.

My attention was called to this region by a recent paper by M. Fernet,[5] of Paris, in which he insists that an early diagnosis of phthisis is facilitated by the detection of an increase in the size of the bronchial and infratracheal

[5] *Bull. de l' Academie de Médecine*, Paris, October 11, 1898.

glands. He makes out in these cases a dullness sometimes to the right and sometimes to the left of the spine and finds, in association therewith, rales at the corresponding apex and a dullness at the corresponding base. But there is no mention of any percussion of the spine itself.

On the strength of the conducting power of individual vertebrae, I was prepared to find a local spinal dullness produced by enlarged glands, but I did not suspect, until I had established it by percussing a number of healthy chests, that the normal glands also yield a dullness. From this investigation came out the fact that the fifth dorsal spine is invariably duller than its neighbors, and that this dullness, as shown in the diagram, extends to the right over a small quadrilateral area, about 1″ by ¾″. Sometimes it shows a very slight extension to the left of the middle line.

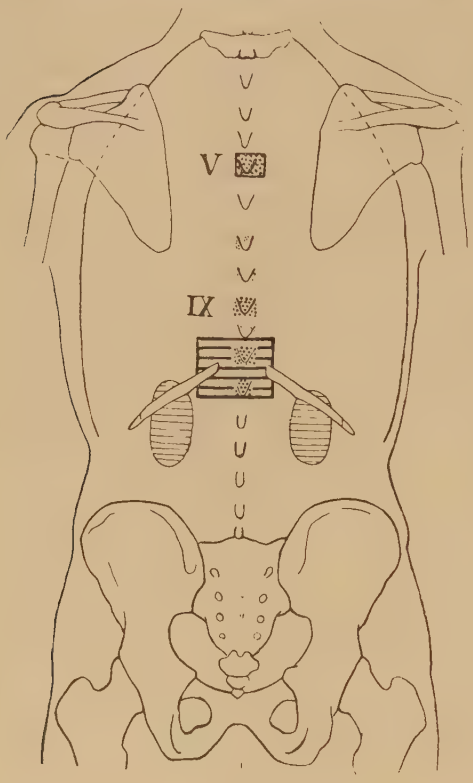

FIG. 7.

The lower dorsal dull patch due to pericardial effusion—showing its position below the level of the pericardium and of its contents.

This dullness of the fifth dorsal spine is absolutely normal and anatomical. A familiarity with it is an obvious essential for the appreciation of any abnormal dullness which may present itself.

I attribute the fifth spine dullness to the cessation at the level of the fifth vertebra of the resonant influence of the trachea and to the replacement of this resonant influence by the dulling influence due especially to the infratracheal glands in addition to other mediastinal structures, but, perhaps, distantly also to that of other solids in touch with them.

The practical value of an investigation of this dullness in a great variety of intrathoracic diseases, and particularly in scrofulous children and other subjects liable to glandular enlargements, need only to be mentioned.

The Left Auricle Dullness.

The post-cordial dullness is of obvious importance to the physician. It

confirms the results of our anterior examination, it enables us to demonstrate the absence of any great cardiac changes which would alter the normal area or degree of dullness. Lastly, a familiarity with the exact outline is our only means of discriminating from the post-cordial dullness those mediastinal and spinal dullnesses which we might, in our ignorance, have attributed to the heart.

The distance which intervenes between the dorsal surface and the ventricles and right auricle would seem to be an insuperable obstacle to any accurate definition of their size. This is not, however, the case, and modifications in the size of the heart are capable of being identified by careful pleximetry. It is obvious, however, that the most definite results will be yielded by that part of the heart which most closely approaches the spine, and any information that we may gain concerning it might be regarded as specially reliable. The part in question is the left auricle.

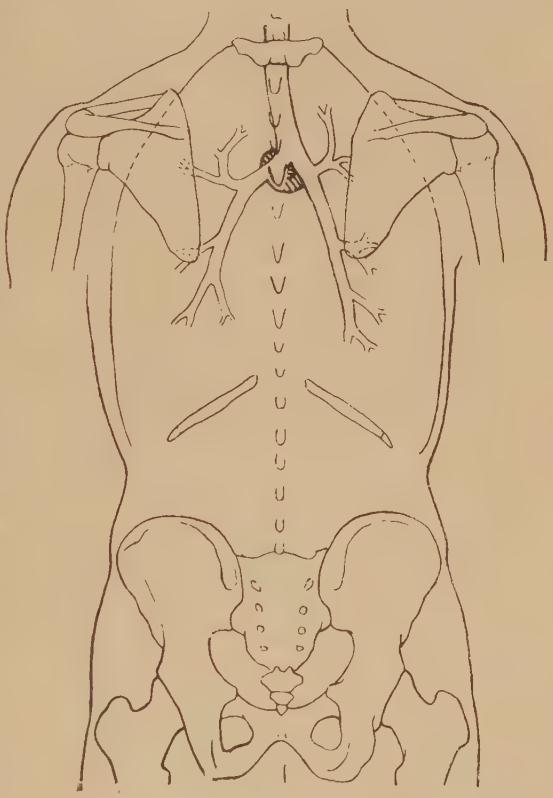

FIG. 8.

The normal situation of the bifurcation of the trachea and of the infratracheal glands which give rise to the fifth spine dullness (cf. Fig 5).

Had I been guided by a different method, that of anatomical surface markings as a preliminary to percussion, a recognition of the left auricular dullness would have been one of my earliest results. The method adopted has been throughout the opposite—the tracing of outlines irrespective of any anatomical guide and the subsequent verification by dissection. It thus happened that the fact that it is easy to percuss out the left auricle was one of my latest results. Although to attempt it appeared, at first sight, to be almost too great a refinement of percussion, the outline of the left auricle is usually, owing to its superficial portion, the most likely portion of the post-cordial dullness to be obtained with ease and accuracy.

The normal left auricle dullness (cf. Fig. 4) is of semilunar outline, convex upward, placed almost symmetrically across the middle line, sometimes extending a little further to the right than the left, resting on the hepatic line as a base and extending vertically from about the eighth to the ninth spine. It is surrounded above and on both sides by the much less marked dullness belonging to the rest of the cardiac area. The resonance of the eighth and ninth spines is considerably affected by it, and the ninth spine in particular is always comparatively dull. I can confidently recommend students to practise this percussion, for whosoever has once succeeded in identifying it will experience no trouble in always finding it, its dullness being greater than that of any other part of the post-cordial outline.

The value of this examination is great, for the left auricle is liable to considerable variations in size, and in mitral stenosis to great dilatations.

BACTERIOLOGY: ITS PRACTICAL VALUE TO THE GENERAL PRACTITIONER.

BY W. WAYNE BABCOCK, M.D.,

Pathologist to the Kensington Hospital for Women; Demonstrator of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia.

To the general practitioner, bacteriology is offering a constantly increasing field of usefulness. From its earliest days, this science has suggested a theoretical basis for treatment, while it has developed, especially during more recent years, numerous products of practical remedial value. For the most part it has not been difficult for the physician to avail himself of these advances in treatment. The methods founded upon theory have been particularly popular, and it has been only necessary for the micro-organismal nature of an affection to gain credence in order to have innumerable preparations of real or fancied antiseptic value pressed into service.

From the earlier vague and theoretic means of combating bacterial invasion, we are now emerging upon a more rational therapeusis, founded upon laboratory investigation and endorsed by clinical trial. Although preventive inoculations and the use of toxins and antitoxins have been adopted with some reluctance, their application is not difficult and their employment is now becoming general. Coincident with the recent advances in etiology, prophylaxis and therapeutics, and scarcely less important, are the strides made in bacteriologic diagnosis and prognosis. And yet, despite the great value of these latter innovations, it is entirely probable that bacteriology has been of far greater service to the practitioner in the line of treatment than in diagnosis. The scratch of the vaccine lancet or the

thrust of the antitoxin needle requires neither erudition nor great technical skill, while indulgent manufacturers beg to supply the practitioner with more convenient and refined products. On the other hand, unfortunately, the methods of diagnosis have not only required laboratory training but also laboratory apparatus.

These difficulties are being largely overcome in the medical centers by the establishment of municipal laboratories, but in the more remote districts the general practitioner is left, as usual, self-dependent. There is, moreover, a prevalent impression that the general practitioner requires but little knowledge of bacteriology. This needs correction. The specialist is a man who, by exceptional proficiency in a single branch, is exempted from a thorough knowledge of general medicine. Serving in a single field, he exacts service from his confreres in all others, including that of skilled laboratory workers. The true position of the general practitioner is, naturally, quite the reverse, and with the knowledge that "diagnosis is treatment," bacteriology must be far from the least of his many accomplishments. He may therefore rejoice in the fact that some of the most important of bacteriologic methods now require but simple apparatus, are capable of rapid performance and demand no exceptional skill. Given a good microscope, which may now be considered an essential part of the practitioner's outfit, a very moderate additional expense will provide the essential equipment for many of the very important diagnostic tests. Indeed, it is now possible without any aid from the microscope and with no more complicated apparatus than a test tube, to determine the presence and activities of typhoid bacilli in the body; and thus, by a procedure scarcely more difficult than the test for sugar in the urine, diagnose the existence of enteric fever. The single example may serve to illustrate the error of a prevalent opinion that bacteriology is hardly accessible to the practitioner as an aid in his daily work.

In this article I desire to mention a number of the practical advances in bacteriology and to indicate how much of essential value in the various fields they offer to the progressive physician. Certain of these advances may never have a general use; others are as yet very imperfectly developed; improvements may be expected upon all; yet we do our patients an injustice if we do not avail ourselves of some of the present benefits. It is convenient to group the bacteriologic advances under the general headings of *Etiology, Diagnosis, Prognosis* and *Treatment.* In attempting this, no excuse is offered for mentioning much that is trite to many medical readers.

Etiology.—On referring to the causal relations of bacteria to morbid conditions, we find that there is a large number of diseases for which microorganisms may reasonably be claimed as the inducing factors; a considerable number for which certain bacteria have been described as the etiologic agents, and—until within a very recent period—but a very moderate num-

ber of which definite bacteria have been satisfactorily established as causal. Under this latter class we now have such prominent bacteria as Koch's bacillus of tuberculosis, Eberth's bacillus of typhoid fever, Klebs-Löffler's bacillus of diphtheria, Koch's spirillum of cholera, Neisser's diplococcus (gonococcus) of gonorrhea, Nicolaier's bacillus of tetanus, Obermeier's spirillum of relapsing fever, and Kitasato's bacillus of plague. Scarcely less important and also well authenticated is the bacillus anthracis of malignant pustule, bacillus mallei of glanders, bacillus leprae of leprosy and the streptothrix (?) (ray fungus) of actinomycosis, and of madura foot. To these should be added the well-recognized micro-organismal causes of septic and suppurative conditions—such as the varieties of staphylococci, so frequent in abscesses; the streptococcus found in erysipelas; the bacillus pyocyaneus of green pus; the bacillus coli communis, frequent in abscesses adjacent to the intestines; the bacillus aerogenes capsulatus, found in a usually fatal form of sepsis associated with gaseous edema, etc.

Nearly all of these organisms have been proved to be the specific causes of their respective diseases by conforming to the well-known rules of Koch. That is, the organism is found to be constantly present in the bodies of those affected by the disease, may be grown in pure culture outside of the body, when properly inoculated in lower animals it reproduces the disease, and may again be recovered from the animal so infected.

There are also good reasons for accepting a number of other organisms as specific. Recent investigations corroborate the claims of Sanarelli that his bacillus icteroides is the cause of yellow fever.

The bacillus described by Canon and Pfieffer for influenza, and by Canon and Pielicke for measles, are generally accepted. The Lustgarten bacillus of syphilis has not been sustained, but van Niessen claims to have cultivated from syphilitic blood a bacillus producing characteristic lesions in pigs and monkeys.

The claims made that the bacteria causing mumps, scarlatina and whooping-cough have been isolated, do not, as yet, appear conclusive; while the organisms of such notably infectious diseases as typhus and small-pox await discovery. The better knowledge of the bacteria producing the infections has been fruitful in improving hygienic measures—a subject too extensive to be considered at this time. Not less important have been the reflections of etiologic advances in improvements of diagnosis, prophylaxis and treatment.

Bacteriologic Diagnosis.—Having ascertained that a micro-organism is invariably found in the body in association with a single disease and with that disease only, the diagnosis of the disease may readily hinge upon the determination of the presence of the bacterium. The chief methods used to determine the character of a micro-organism, and thus diagnose the disease, depend upon: (1) Peculiarities in form and arrangement; (2) peculiarities of staining; (3) peculiarities of cultural growth; (4) pecul-

iarities of effects produced when introduced into the bodies of certain animals; (5) peculiarities in behavior of cultures of the micro-organism when brought in contact with certain fluids from the diseased animals.

Certain of the higher forms of the vegetable parasites, especially the parasitic moulds and yeasts, are readily recognized by their peculiarities of form alone. For example, the saccharomyces albicans of thrush and the varieties of aspergilli found in the external ear are readily determined by microscopically examining some of the suspected material in a drop of an indifferent fluid; while an accurate diagnosis of the varieties of ringworm, of favus, of tinea versicolor, may be obtained by removing some of the affected epithelial scales and hairs and examining under the microscope for their respective moulds, after treating with alcohol and ether, and strong caustic potash to remove the fat.

The similarity between different varieties of bacteria is so great, however, and pathogenic micro-organisms are so frequently aped in shape and grouping by the benign varieties, that this first method of diagnosis, as a rule, is merely corroborative to staining and cultural methods. Thus the most noteworthy peculiarity of the tubercle bacilli is their resistance to decolorizing agents; and yet it is also very important that the organisms appear as short rods, with rounded ends, a slight curve and a tendency to be arranged in II, V or X like figures. The simple method of diagnosing this bacillus by staining has proven of chief value in tuberculosis of the respiratory tract, the presence of tubercle bacilli in the sputum being practical proof of the existence of the disease. The same method of diagnosing tuberculosis in other parts of the body has given less satisfaction. In tuberculosis of the genito-urinary tract, it is often difficult to find the bacilli in stained preparations of urinary sediment, and the bacilli are rarely seen in the pus from tuberculous abscesses. Although sputum that has become putrid may continue to show the characteristic bacilli, it is advisable to make preparations of fresh fluids. Urine, especially, should be speedily centrifuged and examined, and it is probably an advantage to use a method which obviates certain of the extraneous urinary substances. While the smegma bacillus and the leprosy bacillus resemble the tubercle bacillus in staining properties, it is to be recalled that both of the former bacilli stain more rapidly, decolorize more easily and have different grouping tendencies than the latter. The failure to find tubercle bacilli, of course, does not necessarily negative the presence of the disease, nor may the number of bacilli found bear any relation to the extent of the disease process.

Gonorrhea, at present, is most accurately diagnosed by staining. The organism, which is a rather large diplococcus with flattened surfaces in opposition, and a tendency to be found in groups in or upon the cells, is differentiated from most other diplococci by failing to stain by Gram's method, although readily coloring with the ordinary basic anilin dyes. In

subacute or chronic cases the gonococci, having invaded the deeper epithelial layers, may be absent from the discharge except during exacerbations. It has, therefore, been suggested that in gleets of obscure nature the "Beer Test" be used; the visit to Bacchus being frequently rewarded by the return of the gonococcus to the discharge.

The staining of cerebro-spinal fluid withdrawn by the lumbar puncture has been a decided aid in diagnosing certain varieties of cerebro-spinal inflammation. The diplococcus intracellularis meningitidis of Weichselbaum, frequent in the epidemic and very fatal form, resembles the gonococcus by its presence in the leucocytes and by being decolorized by Gram's method. The diplococcus of pneumonia has also been found in the fluid of many of the fatal cases.

In the diagnosis of gastric carcinoma probably the most suggestive addition to the stomach contents, apart from the presence of detached bits of tumor, is the long immobile, club-shaped Oppler-Boas bacillus.

The most important recent advance in the diagnosis of puerperal sepsis is the employment of bacteriologic methods to ascertain the variety of the infecting organism. The fatal infections with the gas bacillus (bacillus aerogenes capsulatus of Welch) and with the septicemia-producing streptococcus should be carefully separated from the milder infections by the colon bacillus and the staphylococcus and the usually localized gonococcus invasions. A sterile glass tube may be inserted into the uterine cavity, some of the lochia withdrawn into the tube, and the tube ends sealed pending the examination of the contents.

In general surgery the value of staining the fluids from infected foci, even during the operation, in order to determine the necessary operative procedure, has not diminished, although the method is not new.

Certain bacteria exhibit, under varying conditions, alterations in their staining properties. Such bacteria may be more distinctively stained after cultivation upon a particular medium. This is so important with the diphtheria bacillus that the diagnosis is made by staining after cultivation upon Löffler blood-serum mixture. The rapid growth, at incubator temperature, of the irregularly rounded, elevated, porcelain white colonies tending to rapidly coalesce into a diffuse smeary layer, is also quite characteristic of this organism. Elsner, Kashida and Hiss have devised special media[1] for developing characteristic cultures from the typhoid bacillus, but their practical diagnostic value can hardly compare with the simple method of serum diagnosis. Cultures, at present, are of chief value to the practitioner in diagnosing diphtheria, and those who have not the advantage of a laboratory may procure the necessary media, and with a little training make their

[1] Piorkowsky (*Ber. klin. Woch.*, 7, 99,) has recently recommended a medium composed of normal urine containing 0.5% peptone and 3.3% gelatin. The medium is inoculated from the stools, and incubated 20 hours. The typhoid colonies appear as colorless spots of radiating threads, while the colon cultures are sharply-defined, round, yellowish colonies.

own examinations. In lieu of an incubator the inoculated tube, in a protecting case, may be carried in an inner pocket, the body supplying the necessary warmth.

Animal inoculations have proven useful in diagnosing genito-urinary-tuberculosis in cases where the bacilli were not shown by staining. Some of the fresh urinary sediment (obtainable from a single kidney by the ureteral catheter) is injected into the abdominal wall of a guinea pig that is killed after five weeks and examined for tuberculous lesions. Animal inoculations are also of value in diagnosing the type of many of the infections; while the subdural inoculation, in a rabbit, of a bit of the spinal cord of the affected animal remains the best method of ascertaining the existence of rabies.

One of the greatest advances in bacteriologic diagnosis is that dependent upon the tendency of the bacteria of a given disease to agglutinate, or collect in clumps, and to lose their motility when brought in contact with the serum from a person affected by the disease. Although this method is useful in determining the variety of the bacteria, the presence of infective organisms in drinking water, etc., its greatest value has been in diagnosing disease.

Being present in over ninety-nine per cent. of cases of typhoid, it is the most useful diagnostic sign yet discovered. The method has not been as thoroughly developed in other diseases, but has shown a value in aiding the identification of cases of cholera, glanders, malta fever, tuberculosis, leprosy, relapsing fever and other diseases. Considering that the method is yet in its infancy, the results obtained have been surprisingly accurate. The test is performed with or without the microscope, the former having the advantage of quickness and greater accuracy. The main difficulty that the practitioner will find with this method is the difficulty of keeping on hand fresh cultures of the bacilli. The advantages of emulsions of dead bacilli are readily apparent, but thus far they have proven less reliable than the fresh cultures.

A final, simple and practical method of diagnosis is by the injection of bacterial products into the affected animal. Tuberculin, a glycerin extract of tubercle bacilli, has proven to be a most reliable agent for diagnosing tuberculosis. Unfortunately, its tendency to exacerbate this affection has largely precluded its use in the human family. Mallein has also proven successful in diagnosing glanders in horses.

Prophylaxis and Treatment.—Two main classes of bacterial remedies have been developed, namely, those obtained directly from the micro-organism and those indirectly obtained by the action of bacterial products upon animals. To the first class belong the toxins and vaccines; to the latter class the antitoxic and bactericidal serums. The former have been of chief value as prophylactic and immunizing agents, but, as yet, have not

revealed the curative powers of the latter class. Upon the other hand, the antitoxins have more transient immunizing powers than the toxins or vaccines. Protective inoculations or vaccinations are now accessible to the practitioner for small-pox, anthrax, cholera, plague, hydrophobia, and for a number of diseases of the lower animals—as black leg (symptomatic anthrax), hog cholera, etc.

The curative effect of the bacterial products of the tubercle bacillus devised by Koch have hardly proven commensurate with their dangers, while the employment of Coley's mixed toxins of prodigiosis and erysipelas for the relief of inoperable malignant tumors has been followed by a cure only in occasional cases. The antitoxins have shown temporary but valuable immunizing powers in diphtheria and tetanus, and the diphtheria antitoxin has revealed marked curative powers—much greater, indeed, than that of tetanus.

The use of streptococcus antitoxin has been followed by good results in certain cases of sepsis and even small-pox. The results suggest the desirability of greater accuracy in diagnosing the variety of the infecting organism as an aid to the proper treatment.

With a prospect for the future of increased and simplified diagnostic advances, and multiplied and more efficient curative products, the advantage of a more thorough knowledge of bacteriology to the practitioner are not easily overestimated.

The Demonstration of the Tubercle Bacillus in the Feces. Rosenblatt (*Centralbl. für inn. Med.,* 1899, No. 29; *Settimana medica,* July 29), noting the difficulty of finding the tubercle bacillus in advanced cases of intestinal tuberculosis, owing to the fluidity of the stools with which the bacilli are mixed up, conceived the idea of administering tincture of opium until the stools become solid and formed. The micro-organisms are then sought for solely on the surface of the feces, where, it is said, they can be found without difficulty.—*N. Y. Med. Jour,*

The Climatic Treatment of Phthisis. Richer (*Can. Med. Rec.,* July, 1899) formulates the following rules: (1) Lymphatic and glandular forms of the disease, may derive a certain amount of benefit by open air mountain life, but are more likely to improve by a prolonged sea trip. (2) Incipient pulmonary forms, and some of the cases where softening is just commencing, which, according to the district in which they live, may be sent either to the Adirondacks, Gravenhurst, or the Laurentians. (3) Far advanced cases, where softening is marked in one or both lungs, with more than one cavity, had better be kept at home under appropriate sanitary regime, as their presence in a sanatorium exercises a demoralizing influence upon the other patients. These latter cases should be especially cared for in a city hospital, conducted upon the same principles as our civic infectious hospitals, and at the expense of the City, or State, or both.

CLINICAL LECTURE.

CAUSES OF URINARY RETENTION IN THE MALE: ITS TREATMENT.[1]

BY ORVILLE HORWITZ, M.D.,
Professor of Genito-Urinary Surgery in the Jefferson Medical College, Philadelphia.

THE age of a patient is frequently a guide to the cause of retention of urine in the male; for instance, should one be called to see a child suffering from this disease, the first question should be, "What is the age of the patient?" If the reply be that it is a new-born infant, you would know at once that the condition arose from one of three causes: First, a contracted phimosis; second, an imperforate meatus, or, third, a congenital cyst of the sinus pocularis; thus, by simply ascertaining the age of the patient, the probable cause of the trouble would be known, as well as the instruments that it would be necessary to carry with you.

Should the patient be between the ages of eight and thirteen, and if he had been the victim of an attack of fever, from which he was convalescing, you may be pretty sure that the retention arises from debility, and, in all probability, will be relieved by the introduction of a proper sized sterilized rubber catheter.

Should there be no known cause for the condition, it will generally be found to be due to the lodgment of a foreign body in the urethra, and a suitable instrument for its extraction will be necessary.

If the patient be between the ages of seventeen and twenty-five, the most likely cause will be found to be of gonorrheal origin, in which condition there would, of course, be a corresponding history of the case. There would be found to be a frequent desire to urinate, accompanied by a burning pain at the neck of the bladder; these conditions precede an attack of retention. To relieve this variety of retention, the canal should first be irrigated with a warm solution of the permanganate of potash, not stronger than 1:2,000. A sterilized soft rubber catheter (Jacque's) should then be introduced, and the urine drawn off. A hot bath should be then prescribed, when the patient is to be wrapped in blankets and put to bed; then ten grains of quinin with a quarter of a grain of morphia administered, under which treatment the individual will perspire freely. The diet should be of light, easily digested food, and the bowels should be kept in a regular condition.

Between the ages of twenty-five and forty-five, the ailment is usually due to stricture. If retention be due to this cause, the filiform bougie is the first instrument to be employed. Should it pass freely on to the bladder, it may

[1] Clinical lecture delivered at the Philadelphia Hospital, January 14, 1899.

be fastened *in situ*; the individual given a hot bath, to be followed by the administration of a full dose of quinin and morphia, with a hot lemonade, and the patient placed in bed, when it will be found that the bladder will be slowly emptied.

Should the bladder be much distended, and should the patient suffer much pain, an effort should be made to pass a Ganley tunneled catheter over the filiform, in order to evacuate the urine with the least possible delay. If this procedure fail, the bladder must be aspirated. In some cases of impassible stricture delay is dangerous, and an immediate operation is indicated. The operation to be performed will depend upon the character of the stricture, its location, and the condition of the urethra.

When the patient is over sixty years of age, retention of urine is usually caused by an acute inflammatory condition of the prostate gland, which has undergone senile hypertrophy. If the patient is seen soon after he has begun to feel the pain arising from retention, and has not already made numerous efforts to pass a catheter into his bladder, a small, soft rubber catheter may be successfully introduced. Should the middle lobe of the prostate be markedly enlarged, a Mercier's elbow catheter is the one to be chosen. When the obstruction is caused by the enlargement of one of the lateral lobes, the "rat-tail" catheter is the one to be employed. In some instances, where it is impossible to insert a rubber instrument, an over-curved metal catheter will be found to pass readily. When it is possible to insert a rubber catheter, it is well to leave it in position for the space of four days; in this way continuous drainage is achieved.

Should it be impossible to pass any instrument, the bladder may be aspirated, the patient given a hot bath, besides a full dose of quinin and bromid of soda, and kept in bed. Under this treatment, the chances are that by the time urine has again accumulated in the bladder a catheter may be successfully inserted. Should instrumentation per urethra again fail, aspiration must be once more resorted to. When the case of retention of urine is of long standing, and fruitless attempts have been made to draw it off, and when the prostate gland has been injured, accompanied with free hemorrhage from the urethra, the patient being physically below par, immediate suprapubic cystotomy is the proper course to pursue. If the bladder be much distended, the operation is very simple, and can be readily performed in a few minutes. In the number of cases of this kind on which I have operated, the results have been most gratifying, having never lost one.

The American Association of Obstetricians and Gynecologists will hold its twelfth annual meeting in the Assembly room of the Denison House, Indianapolis, Ind., Tuesday, Wednesday and Thursday, September 19, 20 and 21, 1899.

TALKS TO GENERAL PRACTITIONERS.

THE LOCAL TREATMENT OF CORNEAL ULCER.

BY WALTER L. PYLE, M.D.,
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THE first step in the treatment of corneal ulcer is to put the affected eye completely at rest with a light bandage (preferably a single Liebreich), and the instillation of atropin solution (gr. j to f℥ii) three times a day. In this way photophobia and lacrimation, from exposure to light and air, are avoided, and movements of the eyeball, constantly rubbing the sensitive denuded corneal surface against the roughened conjunctiva of the lids, are prevented. In some cases it is necessary to apply considerable pressure to attain this end. The atropin sets the accommodative apparatus at rest, dilates the pupil and lessens the liability of the iris and ciliary body to become involved; in fact, it has an antiphlogistic action on the whole anterior segment of the eyeball. The next procedure is the cleansing and disinfection of the cornea and conjunctiva. In mild cases with slight conjunctival involvement, a wash of boric acid (gr.x to f℥i), used every two hours, may suffice. If the infection is intense, or if the conjunctiva is greatly inflamed, a 50% glycerite of boroglycerid may be used in addition morning and evening, taking care that it smears over the denuded cornea. In order to be assured that applications reach the ulcer, the patient should be told to look down; the upper lid is drawn up and away from the eyeball, and the solution or powder is placed on the conjunctiva above the cornea. The eyeball is rotated upward by immediate reflex action, and the whole surface of the cornea is thus covered with the application.

Mercuric chlorid (1-5,000) and formalin (1-2,000 to 1-1,000) may be used as disinfectants. Recently, holocain in 1% solution has been employed with great success in corneal ulcers. It is both antiseptic and anesthetic. Pyoktanin is used in 1-2,000 to 1-1,000 solution, but is only feebly antiseptic. Toluidin blue, a member of the anilin group, closely allied to methylene blue, has been employed as a collyrium in strength of 1-1,000. It is a very effective antiseptic, is not irritating, and has the advantage of outlining, in a blue stain, all corneal abrasion. Astringent solutions containing lead, silver or zinc salts should not be used, as they may cause greater opacity by metallic deposition.

Iodoform is a most valuable remedy in almost all forms of corneal disease, and is also used to diminish corneal vascularity and in clearing up corneal opacities. It may be dusted upon the eye twice daily in very fine powder, or applied as an ointment, with or without massage in strength of one-half

to one dram to the ounce. Atropin may be conveniently incorporated in this ointment as follows:

Atropin sulphate,	gr. ¼
Iodoform,	gr. xv
Vaselin,	ʒij

After dusting iodoform on the cornea, the upper lid should be pulled down and over the cornea and held in place for a few minutes; otherwise, movement of the lid or eyeball will brush the powder off the cornea. The substitutes for iodoform, such as nosophen, antinosin, and xeroform, have not been sufficiently tried to warrant their general use. The only objection to iodoform is its odor.

Calomel is used in very fine powder in small indolent ulcers, and particularly in phlyctenular disease. It is also employed in pannus and in chronic keratitis. It should not be used if any preparation of iodin is being taken internally, or if there is ciliary irritation. Applications should not be made more than twice a day.

The yellow oxid of mercury is occasionally used, but is of greater value after the ulcer has healed. Its use then may lessen the subsequent opacity. It should not be prescribed in greater strength than gr. ½ to ʒi.

Cassaripe is a concentrated semi-solid juice of the cassava plant of the tropics. A 10% ointment is sometimes of use in purulent keratitis.

If there is much pain and congestion, moist hot compresses every two hours for twenty minutes are of great benefit. Not only are they grateful to the affected parts, but they lessen pain, hasten healing, and arouse a general reaction. The compresses may be moistened in heated boric acid solution and wrung out and applied as hot as can be borne. If the pain and congestion are quite intractable, good results are obtained by the application of three or four leeches to the temple of the affected side, or the Heurteloup artificial leech may be used. In urgent cases, local bleeding may be effected by making three or four superficial incisions in the skin of the temple and drawing the blood by the ordinary cupping glasses. Persistent pain points to irido-cyclitic involvement. Ice compresses or cold applications should not be used in simple corneal ulcers. The cornea is an avascular structure, and cold will only retard the vascular changes by which the ulcer is healed. Of course, in traumatic cases, and in those dependent upon purulent conjunctivitis, it is often necessary for other reasons to use ice compresses, even though the cornea is affected; but, as a general rule, heat should be used in inflammations of the cornea and iris, and cold in the inflammations of the conjunctiva and eyelids.

A treatment that has been used recently with good result is hydraulic curetment. A fine stream of a feebly antiseptic solution is directed at frequent intervals and with considerable force, by means of an Anel's syringe, against the infected corneal urea.

If the ulcer resists all treatment and is progressive, the whole of infected

surface should be cauterized by a heated probe or galvano-cautery at dull red heat. This valuable procedure has saved many infected corneas.

If perforation seems imminent, it is desirable to hasten it by paracentesis through the floor of the ulcer, as experience has shown that perforated ulcers heal quickly. After perforation the eye should be cleansed with boric acid solution and a pressure bandage applied continuously for twenty-four hours. If the perforation is central, atropin should be instilled; if it is peripheral, eserin is indicated. If part of the iris prolapses, it should be drawn from the wound and excised.

In very severe cases of serpiginous ulcer, in which all hope of preserving vision is gone and even the eyeball is despaired of, Saemisch's operation is indicated. The whole cornea is bisected through the abscess-region. Any adherent pus or hypopyon may be removed with a small curet or iris-forceps. The wound should not be allowed to close as long as the disease is active.

An important feature in the treatment of severe corneal ulceration, sometimes overlooked, is disinfection of the lacrimal passages. Any co-existing lacrimal catarrh must be treated and any lacrimal obstruction opened, or the ulcer may not heal until the eye is lost. Persistent irrigation with a weak mercuric chlorid solution (1 to 10,000) is an advisable procedure in such cases.

If atropin is not well borne and seems to aggravate the conjunctivitis, it should be stopped and one drop of scopolamin solution (gr. ⅛ to f℥ii) used three times a day.

If there is much conjunctival or lacrimal secretion, the bandage must be dispensed with and smoked glasses substituted. In such cases, the eye should be cleansed thoroughly at very short intervals.

When the ulcer heals the subsequent opacity may be massaged twice daily with a weak yellow oxid or iodoform ointment. The younger the patient the more hope there is of clearing up the opacity; however, in adults, persistent treatment over a number of years may bring about slow, but, nevertheless, decided improvement. Vascular keratitis or pannus is very intractable. If massage with ointment fails, inoculation with jequirity or peritomy may be tried, but with little hope of visual improvement. Electrolysis has given no definite results, and is seldom advised. Corneal implantation is useless.

Premature Death in Russia. Prof. Sikorski quotes the following statistics in a paper read before the Society of Psychiatry of Kieff: During the last 18 years there died in European Russia: Killed by wild beasts, 1,246 persons; killed by lightning, 9,009; burned, 16,280; poisoned, 18,000; frozen, 22,150; suicide, 36,000; killed by weapons, 51,200; died from alcoholism, 85,200; drowned, 124,000.

THE USE AND ABUSE OF THE DOUCHE.

BY D. BRADEN KYLE, M.D.,
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In the treatment of diseases of the nasal mucous membrane, it is frequently necessary to employ solutions for the purpose of freeing the surface of retained secretion. This solution can be best applied by means of an atomizer or douche.

The solution used may be considered from two standpoints: First, that of cleansing; and, second, for the local therapeutic action of the cleansing solution.

The indications for the use of the douche are determined by the character of the secretion, irregularities within the nasal chambers, and whether the process is an acute or chronic one. The nasal irregularity is often more of a contra-indication than an indication. If the irregularity is so located as to direct the flow or current of the cleansing solution toward the orifice of the Eustachian tube, by suction due to forcible inhalation on the part of the patient, the fluid will most certainly be drawn up into the tube. In some individual cases I think some of the bad effects charged to the catarrhal inflammation are really due to the irritating effect of the solution used. In all cases the patient should be instructed to allow the cleansing solution to flow through the nasal cavity, and under no circumstances to use suction.

Another point in the use of the douche I think is often overlooked. The patient usually permits the cleansing solution to flow through the nostril for a few minutes, then attempts to clear the nostril by forcibly blowing the nose before the cleansing solution has had sufficient time to moisten and soften the retained secretion. The irritation produced by this forcible blowing aggravates the condition. The patient should be warned on this point, and the blowing of the nose be forbidden for ten or fifteen minutes after the use of the cleansing solution. By that time the stimulating action caused by the passing of the solution over the mucous membrane will have increased the flow of mucus, and that, combined with the use of the douche, will soften the retained secretion and render its removal comparatively easy.

Frequently much harm is done by the patient using too much of the fluid. The passing of so much fluid over the membrane while cleansing it acts as an irritant and causes the very irritation you are seeking to relieve. The temperature of the fluid used varies with individuals, but the fluid should be as warm as can be comfortably borne by the patient. The delicate mucous membrane of the nose, in its normal condition, requires no douche, and frequently where the inflamed area is a localized one and the douche is ordered, its irritating effect on the surrounding healthy membrane is sufficient to produce and keep up a continued inflammation in that

otherwise healthy structure. This brings up the question of length of time the douche should be used. As to time, no definite rule can be given, but this one point must be remembered—that if the douche is used too long or the solution used is too irritating, it will keep up and aggravate the very condition you are trying to relieve. I do not believe in the use of strong solutions as a douche, and it is a good plan at least every ten days or two weeks to discontinue the douche for at least four or five days, which will determine whether or not any irritation is being kept up by its use.

If the patient complains of marked irritation, after the use of the douche, of headache, pain in the ears and a general sensation of having taken cold, *stop the douche at once.*

Of the alkaline, slightly detergent and dissolvent solutions, I know of none better than

℞ Sodii bicarbonatis,
Sodii biboratis,
Sodii chloratis,
Potassii bicarbonatis, ... aa gr. vi
Aquae distillatae, ... fl.℥j

Another admirable solution, which will allay irritation is:

℞ Extracti hamamelidis (aqueous),
Aquae distillatae, ... aa

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used at a temperature which can be comfortably borne by the patient. This is an admirable douche in acute processes and following operations. The alkaline solution given above should never be used in acute processes, but in the chronic only.

Lead Dioxid in Urine Analysis. Cloudy or fermenting urine, which is usually difficult to filter bright, may be rendered perfectly limpid by the use of lead peroxid, as suggested by Loubiou. Ten c.c. of the urine to be examined are treated with a few drops of phenol-phthalein solution, a little normal soda solution is added until a faint pink color is produced. One gm. of lead peroxid is then added and the mixture is briskly shaken for about a minute, then filtered. A few drops of Tanret's reagent is added, and the mixture is boiled. In the presence of albumin more or less opalescence is produced, according to the quantity of that body present. Quantitative experiments show that the dioxid is without action on albumin in neutral solutions.—*Bull. de la Soc. de Pharm. de Bordeaux.* [*Pharm. Jour.*]

SOME POINTS IN RELATION TO SYPHILIS.

BY J. D. THOMAS, M.D.,

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In my last "talk" I stated that during the primary stage of syphilis the blood did not contain the germs of the disease. This is demonstrated in the law of Diday, which is, that the child is not syphilitic if the mother acquires her chancre not earlier than the seventh month of utero-gestation; or, in other words, the child is born before the mother's blood becomes contaminated. In a case like this, the child may acquire a chancre in passing through the maternal parts, but the disease would not then be hereditary. The same fact can be observed in a patient with a chancre upon the penis when auto-inoculation is afterward (two or three weeks) practiced, say on the finger. The chancre on the finger will proceed to mature, but as soon as the poison from the penis chancre enters the circulation the finger chancre aborts, owing to the precedence of the chancre on the penis.

Another law, that of Profeta, is that if the mother acquires a chancre at any time after conception the child escapes. This is based upon the teaching of physiology that there is no communication between the maternal circulation and that of the fetus. This, however, is a disputed point; but, even if it were true, there are so many accidents, though trivial in their character, such as slight separation of the placenta or some other pathologic change in the attachment of the ovum, that the blood of the mother may enter directly into the circulation of the fetus; hence the child runs many chances of being syphilitic.

Experimentation by inoculation proves to a certainty that the *natural* secretions of the body do not contain the germs of syphilis. The spermatozoon and ovum are normal secretions.

It is held by some that the semen of a syphilitic father can infect the ovum in the *healthy* mother—the ovum being syphilitic and the mother escaping. As the sperm does not contain the poison, such an occurrence is impossible. If the husband is a syphilitic and procreates a syphilitic child, is it not probable, under the circumstances, that the wife is also syphilitic? For during all this time the parties are indulging in coitus, and it is probable that mutual abrasions about the genitals may occur at times, when transmission of the disease would take place. That a mother may go through a mild syphilis without her knowledge is not surprising. Indeed, she may place herself under the care of a physician during her secondary eruption from a feeling of malaise, which she may experience, and the physician fail to recognize her true trouble. This is not a mere supposition, for we meet with just such cases. These mothers that give birth to syphilitic children,

but themselves present no evidence of the disease, are never infected by their own offspring, although suckling them while fissures exist about the nipples. This law is called the law of Colles.

Another fallacy to balance the preceding one is where the ovum is said to be infected by the father. Then the ovum is supposed to infect the mother without the production of a chancre—syphilis by *choc-en-retour.* The mother, in such a case, would appear not to be a factor in her relations with the syphilitic father.

A non-syphilitic mother never gives birth to a syphilitic child, and, as a corollary, a hereditary syphilitic child is always the offspring of a syphilitic mother.

Syphilis, like all other eruptive diseases, has a clinical limit; and, again, like the other eruptive diseases, its sequelae may be unlimited. Syphilis loses its contagious character in less than four years; its sequelae *may* last as long as the patient lives. In cases thoroughly treated it may lose its contagious character in one year; this clinical fact we know from occasional observation, wherein some of our patients, against advice, marry at this early period, but do not infect their wives, and hence have healthy children. The far limit of the contagion we know from observation; but its near limit in individual cases we are unable to settle. If any of the lower animals were susceptible to the disease we could, by experimental inoculation, tell each patient when the disease had lost its contagious character, and thus be enabled to state how soon the marriage relation might be entered upon.

Mr. E——, being already the father of several children, in the summer of 1885 contracted a chancre from which Mrs. E—— contracted the disease. On March 3, 1886, Mrs. E—— gave birth to a child, which died in five months from hereditary syphilis. On May 3, 1887, she gave birth, at full term, to a macerated and, necessarily, dead fetus. On August 31, 1888, a healthy child was born. On February 17, 1890, on May 3, 1894, on August 16, 1897, and on February 20, 1899, healthy children were born. These five children have never shown any symptoms of syphilis. The family has been under my exclusive professional care (confinements included) during all these years, so that my opportunities for observation are perfect. In this instance, the mother ceased to convey the disease in less than three years. I could relate numerous similar cases from my notes bearing upon this subject, but this case suffices to enforce what I desire to impress.

My records show that non-syphilitic men have intercourse regularly with women subjects of syphilis acquired three or more years before the beginning of the liason, and remain free from the disease; also women delivered of healthy children and at the time of parturition having breaking down tertiary gummata in the soft palate. Women in the tertiary (sequelar) stage of syphilis may give birth to dead children, but the children do not die from

syphilis, they die from some pathologic condition, due to tertiary accidents in the placenta interfering with the circulation to the fetus. If the accidents in the placenta had not occurred the children would not have perished; neither would they have been syphilitic.

When a woman, newly married, comes to me with syphilis, after marrying a man who had had syphilis three or four years before the wedding, I make bold to tell her that she did not acquire the disease from her husband, but from some fresher syphilitic.

When we know so well the clinical history of this disease we must not believe the statement of the patient when it is absurd scientifically. It is this credence that makes syphilis sometimes mysterious, weird and paradoxic. We must bring the same cold facts to bear in this disease that we do in the non-married female who is pregnant, but denies, by all the gods of Athens, having ever had intercourse with a man.

THE PROGNOSIS AND TREATMENT OF CHRONIC STHENIC GASTRITIS (ACID GASTRIC CATARRH).

BY BOARDMAN REED, M.D.,
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THE great frequency and importance of this disease must be my excuse for discussing it more at length than the subjects hitherto under consideration in this series of talks.

In its incipiency acid gastric catarrh is curable enough when the patient can be fully controlled, including his diet. When there exists merely an excessive secretion of the gastric juice, with only a slight involvement of the secreting glands, a correction of the faulty hygiene upon which it depends, with, and sometimes even without, a neutralizing of the abnormal amount of hydrochloric acid present in the stomach during digestion, by full doses of alkalies, will suffice to cure the affection completely and within a short time. Unfortunately, it is scarcely ever recognized in this stage, since it is so common to classify all the less severe gastric symptoms under the vague name of "dyspepsia" and dismiss such ailing patients with a routine prescription, given at a venture. But the longer this form of gastritis goes on, the more extensively does the mucous membrane of the stomach become involved. When it is fully established and the cell-proliferation has extensively developed, it is rare that the affection can be thoroughly mastered under six months or a year, even with the most skillful treatment, and with the loyal and persevering co-operation of the patient. Later on, when, as almost inevitably happens, the intestines have become involved in a secondary catarrhal process and nutrition has begun to suffer severely, as shown by

emaciation, anemia, loss of strength and nerve tone, and deranged cardiac action with hepatic enlargement or contraction, insomnia, and often some consequent disease of the skin, the difficulties in the way of a cure are vastly increased and the result must be much more doubtful.

The prognosis, then, it may be said, is good in the earlier stages, when the patient can afford, and is willing, to make the necessary sacrifices. If a brain-worker, he may have to abandon his business, or, at least, reduce the time devoted to it. He must certainly change his habits as to eating and drinking, and probably will have to reform unhygienic habits in other respects. Even advanced cases, with the help of such sacrifices and of the best possible treatment followed up for a long time—in the worst cases often for several years—may be restored to fairly good health in the end, though there are few diseases that tax more severely the patience and ability of the physician.

As to the treatment, it presupposes, as an absolutely indispensable condition, a few laboratory appliances and the ability to make a number of the chemical analyses of the stomach contents that have been described in previous talks.

As the diagnosis cannot be reached without the aid of the stomach tube and burette, so you will find it necessary to make the quantitative tests for free hydrochloric acid and for the total acidity, at least, in order to manage a case of this disease with any hope of success. For the dose of alkali that fails utterly to lessen the percentage of acidity in one patient, proving possibly so small relatively as even to stimulate the glands to a still more excessive secretion, may within a few days change, in another patient, the excess of hydrochloric acid into a deficiency. Not to be able to recognize this changed condition would risk a serious injury to the more sensitive patients.

By far the most important part of the treatment is the hygienic. You must, first of all, free the patient, so far as possible, from any existing mental overstrain, great worries, or sexual erethism. These are probably among the most prolific causes of hyperchlorhydria or excessive secretion of hydrochloric acid, which, when long continued, doubtless always results in chronic sthenic gastritis. According to my experience, when it is impossible to remove these disturbing influences, as unfortunately it often is, the patients do not get well.

Rapid and excessive eating and insufficient mastication of food are other prominent causes of the disease, and must be reformed altogether before there can be any possibility of a cure.

As to the kind of diet best suited to these cases, authorities differ widely. Probably a majority of them still recommend that patients be fed mainly on the albuminoid foods, including, especially, meat, eggs and milk, for the reason that these neutralize a far larger proportion of the acid than do

the starchy foods, and for the further reason that starch ordinarily is very imperfectly digested in these cases, thus leading to injurious fermentation.

These would seem to be weighty reasons—and at first unanswerable ones—but my own experience soon taught me that on a meat diet hyperchlorhydric patients were prone to grow worse instead of better, and various other specialists in gastric diseases record similar observations. And Hemmeter has demonstrated, beyond any question, that meat in animals is a powerful excitant to the gastric glands, largely increasing the secretion of hydrochloric acid. These observed facts would not settle the matter if it were true that starchy food could not be made to digest in such persons. But here again experience is worth more than theory, and it has shown that the most excessive acid secretion does not preclude us from giving, with certain precautions, a due proportion of carbohydrates or starchy foods. A physiologic diet—one that will sustain nutrition unimpaired for long periods—must include a preponderance of the class of foods to which starch and sugar belong, though the hydrocarbons or fats will help to supply any deficiency of these. On meat, fish and eggs, with even milk added, but without starch or sugar, an adult patient would ultimately suffer serious impairment of health. There is some sugar in milk, but not enough to sustain nutrition perfectly.

You can overcome the difficulty by having the starch partly predigested or caused to undergo artificially some of the chemical changes that finally transform it into grape sugar. This is done by heat in making toast or zwieback, and may be greatly promoted and hastened in the stomach by administering with the starch some of the various diastasic preparations, including the one known as Taka Diastase, which is quite active. When, by giving moderate doses of calcined magnesia and bismuth, or of bicarbonate of soda, directly after eating (or in some instances before), the excessive acid can be neutralized and thus the continuation of salivary digestion in the stomach be rendered possible.

In cases of hyperchlorhydria, then, whether they have progressed to the condition of acid gastric catarrh or not, your proper course will be to order as bland, non-stimulating and easily digestible a diet as possible, at the same time taking care that it is one that will fully supply the needs of nutrition. You will best accomplish this in most cases by letting milk, when it agrees in other respects, form a large part of the aliment, adding to this eggs, gluten preparations, maccaroni or spaghetti, and toast or zwieback, with also an abundance of butter or other fats, provided the intestinal digestion be not seriously impaired. The blander vegetables may also be added, especially in the form of purées, and baked or boiled and mashed white potatoes often agree fairly well when eaten slowly in the early part of a meal. String beans, spinach or squash may, in many cases, be safely allowed, but all the starchy foods need to be thoroughly well masticated and in-

salivated and taken in the earlier part of a meal before the stomach contents have become excessively acid. Idiosyncrasy (which here means usually intestinal indigestion) may compel the omission, in certain cases, of various articles which agree perfectly in others apparently similar. Cane sugar is apt to increase fermentation, but may sometimes be well borne. Fish or meat may be safely allowed at one of the three daily meals in all except the most stubborn cases, and especially for patients who are obliged to live in hotels or boarding houses. Without these foods patients so situated are often driven to desperate straits, since they can rarely obtain enough of other viands that are suited to them. Beef juice or scraped beef is much better for these patients than meat fiber, for the double reason that it digests much more rapidly and is far less irritant to the inflamed gastric glands. Hashing the meat and removing the gristly portions is also advisable. All the more acid fruits should be forbidden, though the milder ones, such as baked sweet apples, white grapes and bananas, and, exceptionally, fully ripe peaches or pears, and very sweet oranges may be allowed *sparingly*.

The best beverages for such patients are water and milk, variously combined and flavored. They may be pleasantly warm at meal-time, but never hot enough to be decidedly stimulating. There is no objection to the infusions of burnt grains known as cereal coffees. Indeed, they are nourishing and innocuous and most patients soon learn to like them almost as well as their accustomed infusions of the real stimulant beans. A large use of some non-stimulating fluid is helpful in diluting the excess of acid in these cases, both during and after meals, except when the motility of the stomach has become seriously impaired, and even when there has occurred some dilatation from pyloric spasm, a glass of plain water drank every half hour during digestion will often do good, rather than harm, by lowering the acidity of the gastric contents to the non-irritating point. Observation in a large number of cases has led me recently to this view, which is contrary to that taught by some leading authors and formerly held by me.

Real coffee and also tea stimulate the gastric glands, and, besides, tend to increase the amount of uric acid in the system, and many (perhaps I should say most) of these patients suffer from uric acid excess. Chocolate is better, except when there is concomitant intestinal indigestion, and then it usually aggravates the latter condition. The best grades of beers and of the lighter ales sometimes agree well, when taken with or after meals, on account of their diastasic qualities, though, except in the smallest quantities, they are liable to do harm, because of the acid they contain.

The spirituous liquors, though not acid, stimulate the peptic glands in small doses, and act injuriously, when long continued in any dose, upon the liver which, in these cases, is damaged soon enough anyway by the auto-intoxication resulting especially from the intestinal complications.

The most important articles of diet contraindicated and to be forbidden

entirely are the sharper condiments, such as pepper, horse-radish, mustard, spices of all kinds, vinegar, garlic, onions, and the hot or stimulating sauces. An excessive amount of salt is also objectionable. Meat fiber, unless finely hashed, tends to over-stimulate all the more decided cases of hyperchlorhydria, and should be much restricted at least. The vegetables, like peas, beans and corn, except when prepared in purée form, contain much tough and irritating indigestible residue and do not suit such cases well. Coarse oatmeal with its sharp husks, and any of the cereals when only partly cooked, are sure to aggravate.

When one considers that in most American restaurants, hotels and boarding-houses, as well as in the majority of private households, the soups are fiery hot, the steaks and chops prepared with butter and pepper, and the coarser cereals that are almost universally furnished, rarely more than half cooked, is it any wonder that chronic acid gastritis is the most prevalent form of dyspepsia in this country, and that it is, under ordinary conditions, very difficult to cure?

Patients thus afflicted should not do more than a very moderate amount of mental work, and, though they need to be as much as possible in the open air and sunshine, should not exercise even their muscles excessively—to the point of marked fatigue. They should be very moderate in sexual indulgence and avoid entirely sexual excitement which remains ungratified. They should, above all else, have an abundance of sleep. Cold or tepid sponge baths (preferably with salt water), salt rubs, and various other tonic hydriatic procedures are helpful.

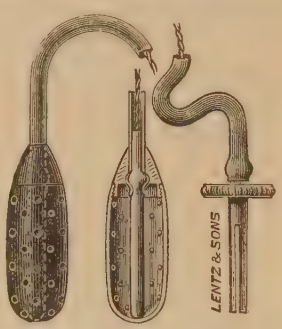
A very valuable and, in many cases, an indispensable means of combating the sthenic, as well as the asthenic or atrophic, forms of chronic gastritis is lavage. In most of the advanced cases, and in all of those with dilatation and stagnation, which often result from spasmodic contraction of the pylorus in this disease, you will need to wash out the stomach every day, or, at the very least, every two days. Dissolve two teaspoonfuls of bicarbonate of soda in each quart of warm water and have the lavage continued with this solution until the last comes away clean, without even small fragments of mucus. When the stomach is badly infected with yeast fungi, or other micro-organisms, I have found the solution of half a teaspoonful of alum, instead of soda, in the last quart of water a helpful resource.

The lavage, as a rule, should be done in the morning, at least twenty to thirty minutes, if possible, before breakfast, though there is no objection to washing out later in the day, provided a time can be found when the stomach is practically empty, so as not to involve the harmfulness of removing digested nutriment almost ready for absorption.

A practical wrinkle which I have hit upon, and found very useful, is to precede the lavage proper by having the patient drink two or three glasses

of the prepared solution (or if this has too bad a taste, of plain warm water), and then assume such different positions upon a couch or a carpeted floor as will bring the fluid into contact successively with every part of the stomach, meanwhile taking deep inspirations and forcibly contracting the abdominal muscles so as to make the contained water wash the walls of the stomach. For example, the patient should do this at first while lying on the back, then on either side, on the face, and, finally, in the knee-chest position. These movements in such positions, kept up for three to five minutes in all, will enable the stomach to be washed out afterward completely in one-third the usual time.

You need to be fully informed as to another most valuable measure, which is especially adapted to those serious cases of chronic sthenic gastritis which have resulted in, or become complicated by, dilatation of the stomach with delayed emptying of its contents and all the dismal train of troubles which follow. It is intragastric electricity—both galvanization and faradization. By means of my modification of the intragastric electrodes previously in use, an illustration of which is here shown, it is now possible for any physician to treat in this way the most delicate patients, including some of those who cannot retain in position the ordinary stomach tube long enough to admit of a complete lavage. This is owing to the fact that the cord carrying the current is very fine, perfectly insulated and covered besides by thin rubber, while at the same time the lower end is so stiffened as to facilitate its introduction. The end-piece is also so improved in form as to be easily swallowed and, what is equally important, may be withdrawn without difficulty.



To carry out this special treatment, connect one pole of a good, high-tension faradic battery (one of Kidder's latest has served me well) with a well-wetted pad, about 4x6 inches, which is to be placed over the epigastrium against the bare skin. The patient then, while sitting, drinks a full goblet of water, swallows the intragastric electrode, and lies down on the back on a comfortable couch. The other pole of the battery is now connected with the cord attached to the electrode and the current turned on gradually. No unpleasant sensation should be experienced. For the cases with a large excess of hydrochloric acid, the coil with the finest and longest wire should be used. After the patient has become accustomed to it, a current nearly as strong as can be borne is safe to be used for five minutes on alternate days. Such treatments are often rapidly effective, not only in lessening the excessive secretion, but also in curing the catarrhal process and strengthening and contracting the dilated stomach, but should not, as a rule, be persevered with for more than a month at a time without intermitting them

for a week or two. The galvanic current used in the same way with the positive pole inside is sometimes more effective in controlling gastric pain. The ordinary faradic coils, with short, coarse wires, are more stimulating and suit better in deficient secretion. When for any reason electricity cannot be applied directly to the inside of the stomach, by the method just described, something may be accomplished by external applications of the same. Despite claims to the contrary, my belief is that strong currents can be made to penetrate the abdominal walls sufficiently to enable both the muscular and glandular structures of the stomach to be affected favorably, though probably in only slight degree directly. At all events, with a large pad over the epigastric region and a small electrode moved slowly upward and downward over the spine, the nerve centers and nerves supplying the digestive organs can be influenced in a helpful way. I generally use three to ten milliamperes of galvanism in this way, with positive to the spine. With the positive pole in the form of a very small electrode, one to three milliamperes may also be passed through the pneumogastric nerves on the side of the neck (under the edge of the sterno-cleido-mastoid muscle) with good results in most of these cases. The negative pole should be over the epigastric region as before. The seances should be from five to eight minutes every other day, or even every day at first.

General massage, avoiding the abdominal region, except for the lightest surface rubbing, is an adjuvant of value, especially in the worst cases in which active exercise is not practicable.

The use of drugs in this disease requires much care and discretion. The patients are usually the better for nerve tonics, if given through any other avenue than the stomach, and will often require temporarily antispasmodics or even sedatives and analgesics. But alkalies must play the largest role in the medicinal treatment. Calcined magnesia has far greater acid neutralizing power than soda and most other alkaline drugs and is the preferable remedy, especially when, as usual, there is associated constipation. The dose required to neutralize the excess of acid and gradually to lessen its secretion may be anywhere from ten to thirty grains (or even more) three times a day an hour after meals. In very severe cases it is best to give a dose of the same also just before the meals, so as to prevent interference with starch digestion.

When the larger amounts of magnesia are required, and in other cases when there is no constipation, it is necessary to combine five to ten grains of bismuth with each dose. It is then, too, often advisable to replace a part of the magnesia by a portion of prepared chalk, which is also an effective alkali. The following is a good combination for such cases:

℞ Magnesiae ustae, ... 3i — 3iv
Cretae preparatae, ... 3ss — 3ii
Bism. subnitrat., ... 3i — 3ii
M. et ft. Chart No. XII.

Sig.: One mixed with a wineglassful of milk or water an hour after each meal.

In particularly stubborn cases (and plenty of such will be met with), the addition to the above prescription of one to two grains of pulverized extract of belladonna will render it more effective, though in that case, as the belladonna powerfully lessens the secretion of the saliva as well as of the gastric juice, it will be well to administer with each meal a dose of some good preparation of diastase.

When the bowels are inclined to looseness, and the magnesia cannot be made to agree, the sodium bicarbonate may be used instead. But, in that event, do not make the mistake of administering it in too small doses, which would aggravate the disease. I have often seen even half teaspoonful doses of soda followed at first by an increase of the hyperchlorhydria. In the severe cases it is safest to give the remedy in teaspoonful doses three times a day, and even then it may fail. I have seen some such combination of magnesia and bismuth as that above given succeed promptly, when soda in the fullest doses had only aggravated the excessive action of the gastric glands. In the end the soda would have accomplished the desired result; but possibly not until after the urine had been kept alkaline for a week or more, and such active alkaline medication cannot be long continued without danger to nutrition. There should be a quantitative test of the stomach contents at least every week, during any such course of treatment, to ascertain the result and avoid going too far.

In cases in which the alkalies are not well borne, I have seen the following prescription occasionally succeed:

℞ Ext. belladonnae, ... gr. i—gr. ii
Ext. yerbae santae, ... f3i

M. et. ft. mass. in pil., No. XVI. dividend.

In other stubborn cases in which alkalies do not act well, large doses of bismuth, such as are suitable for gastric ulcer, according to Fleiner's method, may often effect surprisingly good results. For example:

℞ Bismuthi subnit., ... 3vi—℥i

Ft. chart No. XII.

Sig.: One mixed with milk or water half an hour before each meal.

Possibly in the exceptional cases, in which this prescription proves so successful, there are latent ulcers which keep up the irritation of the glands.

Nitrate of silver in doses of one-eighth to one-quarter grain is sometimes a very useful remedy. It may be combined effectively as follows:

℞ Argent. nitrat., ... gr. ii—gr. iii
Ext. bellad., ... gr. i
Bism. subnit., ... 3ii

M. et. ft. mass. in capsulae, No. XVI. dividend.

Sig.: One after each meal.

This combination is adapted best to cases in which the bowels are too loose, or may be given additionally to correct the over-laxative effect of the treatment by magnesia.

Another useful method of treating the disease under consideration is by spraying the inside of the stomach with a 0.1 to 0.2 % solution of nitrate of silver, after first washing out the viscus.

In most cases of acid gastric catarrh, it is not so difficult to remove all symptoms, to stop virtually entirely the excessive secretion of mucus and to bring the hydrochloric acid within normal limits, as it is to maintain this improved condition. The trouble is that the patient is rapidly relieved of all that he complained of, and will rarely continue treatment till the physician finds by his tests, chemical and microscopic, that the disease has been really cured. A low-grade inflammation of the gastric mucous membrane persists, and when treatment with the careful diet and attention to hygienic requirements otherwise are abandoned, the symptoms soon return.

The only safe plan is to insist upon careful living, with some mild treatment, until the disease can be shown to be well; and, even then, to warn the patient that only by persevering with a reasonable amount of care can he continue well.

The New Illinois Medical Practice Act. The part of the new medical practice act for Illinois which has been subject to criticism (*Medicine,* July, 1899) is that section which requires examinations of all graduates in medicine excepting those from legally chartered medical colleges in Illinois in good standing. It is felt by many outside of the state that to require an examination of alumni of the University of Pennsylvania and Harvard Medical College, and at the same time to admit those from the legally chartered medical institutions of Illinois, is in effect to legislate in favor of home production. That such a rule should be based wholly upon the merits of the case cannot for a moment be denied. The committee who urged the passage of the new act were a unit in the belief that a state examination was the most important part of a medical practice act, and that it should apply to all who applied for a license. As there was opposition on the part of certain medical schools now in the state, a clause was embodied permitting the State Board to recognize diplomas of local institutions. An examination of the law shows that this clause is permissive, and not mandatory. Already the College of Physicians and Surgeons of Chicago has passed resolutions that it does not desire to have its diplomas recognized. It is expected that this action will soon be followed by similar resolutions by the majority of medical teaching institutions in Chicago. This view on the part of teaching faculties will undoubtedly lead the State Board of Health to throw out all diplomas, which they may do under the section in question, which reads: "Graduates of legally chartered medical colleges in Illinois, in good standing, as may be determined by the Board, *may* be granted certificates without examination."

CORRESPONDENCE.

AN IMPORTANT ANOMALY.

To the Editor of the INTERNATIONAL MEDICAL MAGAZINE:

THE St. Louis *Globe Democrat,* of July 20th, tells this story:

"A hole in his right heel enabled a negro workman in the diamond fields of South Africa to secrete and steal gems to the value of $273,000. These he expressed in small parcels of fruits to a cousin in King William's Town, in the extreme south of Africa, from which place both recently departed for England."

This reminds me of an abnormality which I discovered in the dissecting room work at King's College, London, Eng., in 1886—one which we had never seen before, and did not ever expect to see or hear of again, but like Banquo's ghost, here it seems to be again. Dissecting down on the os calcis, we found the tendo Achillis to become somewhat more rounded or cord like than usual and terminate in a hole or pit, into the bottom of which it found firm hold. The pit resembled a navel or umbilical depression, which had a well-defined border, receding, like the corolla of the calla lily, where the tendon rounded over it. Calling the attention of the demonstrator to this peculiarity, he said he had not seen anything like it in his many dissections, and he thought it quite worthy of note. But nothing, so far as I know, ever followed this conversation. Not even to know whether or not he ever made a note of it for himself or as a matter of archival record, I certainly did not until now. Supposing the tissues superficial to this depression to have conformed to it, which in this instance was not the case, and that by help of the fasciae these were fastened to conform to it as in a dimple of the cheek or chin, we would have what the *Globe Democrat* calls a hole in the heel—a very nice pocket place or hole into which to press a diamond would have existed; forming, perhaps, another such a case as the *Globe* speaks of.

No doubt many opportunities would occur to those working at these great diamond fields of South Africa, where so much of value is done up in small packages, notwithstanding the watchfulness practiced, for any one having this malformity to walk off with a diamond in his heel; truly then, there could be "nothing more brilliant than a nigger's heel."

If he did not press the button too hard, as it were, and ring an alarm, he might get away with a number of them, even as far as London, as this man did with his accomplice. There he could shine with $273,000 in more places and ways than one, and society would be dazzled and sociologists would be puzzled to know how these things could be. They would have a new problem in sociology to solve, without suspecting its anatomical solution. They would all have to come to the doctor to find out, and be introduced to some plain physiologic and anatomic facts. As "a pound is a pound," so facts are facts—"the worl' a roun'."

H. L. GREEN, M.D., M.R.C.S. ENG.

REVIEW OF MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE GENERALLY.

UNDER THE CHARGE OF

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WILLIAM E. HUGHES, M.D.,
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AND

WILLIAM EGBERT ROBERTSON, M.D.,
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Quinin in Malaria. Dock (*Jour. Am. Med. Assoc.*, July 29, 1899), in a paper read before the Section on Practice of Medicine at the 50th annual meeting of the American Medical Association, recently held in Columbus, O., discusses this timely topic in a very able manner. He deprecates the exhibition of such large doses as were at one time believed to be necessary, and states that even in the tropics 30 to 45 grs. of quinin *per diem* are sufficient, while here, "in the northern half of the United States, the milder intermittents are often checked by a single dose of 5 grs., more certainly with 10. In general, however, 15 grs. may be looked on as an average dose in such cases. In the severe and more obstinate estivo-autumnal forms, 20 grs. a day may be taken as the normal dose." He believes that it is best to administer that amount at one dose, "or within a time not longer than 2 hours. As to the time at which this should be given, opinions differ. Some, following the teaching of Sydenham, and latterly of Bacelli, Plehn, Manson, etc., give the drug in the decline of the paroxysms. Others, following Golgi, prefer to antedate the paroxysm, believing that by this means the quinin will meet the parasite in its most susceptible stage, when it has just been set free." Dock believes the results to be "more certain and more satisfactory in every respect," when the quinin is given in the decline. In double or still more complex infections, it will be necessary to follow each paroxysm by the remedy. After the temperature falls, quinin is no longer necessary as a specific, but may be given for its tonic effect, say gr. 2, t.d., with or without iron. Dock further touches upon the subject of hemoglobinuria, and sums up as follows: "The question of quinin in malarial hemoglobinuria must be settled by careful clinical observation and experiment, and statements regarding it must be given credit in proportion to the accuracy with which the observations are made. In the meantime, quinin can be used cautiously, if parasites are present, giving the drug in a form

most likely to be absorbed, in doses within the limit of ordinary safety, and stopping its administration as early as the microscope shows this to be proper."

Reaction of the Blood of a Diabetic to Methylene Blue. *The Gaz. des Hop.* (June 13, 1899), quoting from an article of Williamson's (*Pharm. Central.*, 1899), says that diabetic blood will decolorize an alkaline solution of methylene blue, the latter taking on a yellowish color when heated. The solution will not be changed if the blood from a person with any other malady be added to it. Preparation of the solution:

Blood,	1
Water,	2
Methylene blue (1:6,000),	50

To this one add

Caustic potash (6% Sol.),	2

Boil 3 or 4 minutes on a sand bath. The solution is then ready for the test designated.

The Origin of Venous Congestion in Cases of Complete Compensation of Aortic Insufficiency. E. Grawitz (*Deutsch. Med. Woch.*, No. 20, 1899) contributes an interesting article under the above caption. As he points out, we have hitherto regarded venous congestion, during the course of aortic insufficiency, as an evidence of failing left ventricle. In Grawitz's case, although compensation was perfect, marked congestion of spleen and liver occurred, without palpable evidence, however, of pulmonary congestion or pulsation of veins of head, neck or extremities. Arterial hyperemia could be excluded, since there was no pulsation, and from the high degree and firm consistence of the swelling. Such a case, coming to autopsy, revealed venous congestion of liver, spleen and kidneys, with great hypertrophy of the left ventricle, this latter bringing about such an increase in the size of the organ as to cause it to press upon the inferior cava, and in this manner resulted the condition described. That the veins of the lower extremities were not involved, is explained by the collateral circulation which took place between the vena azygos and the lower end of the vena cava. In any case of hepatic enlargement, unless its cause is perfectly clear, the transverse diameter of the heart should be determined by percussion, if necessary, by the Röntgen rays.

The Excretion of Sugar after the Ingestion of Copaiba. Battenam (*Berlin. klin. Woch.*, No. 22, 1899,) recounts the history of a young man who took on his own responsibility 16 gms. of copaiba *per diem*, believing it would cure an attack of gonorrhea from which he was suffering. His urine contained sugar. The author found an increase of sugar in the urine of diabetics after the administration of copaiba, and further, he was able to induce glycosuria in individuals to whom he gave simultaneously balsam copaiba and 100 gms. of grape sugar, though the latter alone was unable to induce glycosuria. He therefore urges great care in the use of this drug in those predisposed to diabetes.

DISEASES OF THE CHEST.

UNDER THE CHARGE OF

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ASSISTED BY

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Contribution to the Clinical Study of Endocarditis Ulcensa Maligna. Ebstein, in a complete and interesting article (*Deutsch. Archiv. für klin. Med.,* Band 63, July 7, 1899) draws the following conclusions: The disease may be said to have an acute, subacute, and chronic course. A settled and constant symptomatology cannot be given for the affection. Other things being equal, the earlier severe brain symptoms are manifest the worse is the diagnosis. The indication of the malignancy of the condition is not so much the local heart signs as the general symptoms. The fever is usually wholly artypical, often with the so-called inversed curve, and is characteristic, not so much in its height as in its great changes. The condition may be easily confused with a cryptogenic septico-pyemia and the differential diagnosis may be impossible. Erratic and artypical fever, with daily chills, cannot, of course, with certainty be taken as a diagnostic sign of metastatic abscesses in malignant endocarditis as they would occur in any pyemic infection. The diagnosis of the typhoid form of the disease can only be reached by exclusion. It is doubtful whether the typhoid state is a result of a general blood poisoning upon the nervous system, or whether it is due, as in a reported case, to abscess formation in the brain. Bacteriologic examination of the blood and lumbar puncture might settle this point.

The Present Aspect of Some Vexed Questions Relating to Tuberculosis, with Suggestions for Future Research Work. Trudeau (*Bull. Johns Hopkins Hosp.,* July, 1899) refers to much of extreme interest that does not, unfortunately, lend itself to condensation. Some of his statements as to the present aspects of the question in dispute are as follows: The border line between racial susceptibility and immunity is very indistinct, and some slight, artificially produced variations are sufficient to render an immune animal susceptible to the tubercle bacillus in its different forms. He refers to the investigations of Flügge, that show that the act of coughing in a phthisical individual disseminates bacilli. Baldwin has shown that the hands of individuals carrying handkerchiefs may be a source of infection. Trudeau advocates the establishment of large sanitaria outside the large cities for the treatment of hopeless cases, and institutions managed by the State for the cure of incipient

cases. Much is to be learned about the variations in strength of tuberculosis. Trudeau believes that he can obtain as efficient toxin from somewhat attenuated cultures, though not as concentrated, as from the more virulent ones. Lovene and Baldwin, in the Saranac Laboratory, have isolated 3 distinct proteid bodies from the tubercle bacillus, each differing in its chemical characteristics. In diagnosis, Trudeau lays especial stress upon the use of tuberculin and the X-Rays. The first he believes is harmless. He accepts the theory that the reaction is brought about by the release of stored-up toxic substances in the bodies of the bacilli by the hyperemia caused by the tuberculin. He employs the X-Rays to determine the excursion of the diaphragm and the presence of slight shadows suggesting consolidation. He refers to his experiments in attempting to produce immunity by inoculation of attenuated cultures. He was, apparently, successful in producing complete immunity in rabbits by inoculation into the anterior chamber of the eye. He states a still more interesting fact, that he can produce a lessened susceptibility to tuberculosis in guinea pigs by the injection of a culture that has been growing on different media for 6 years—most of the time on glycerin-pepton bouillon, either neutral or slightly acid. He does not know whether the presence of acid destroys the virulence or not, but inclines to the idea that mere saprophytic existence of a pathogenic micro-organism causes it to lose its virulence, perhaps, from the long period in which the bacteria have not had to cope with the resistence of living tissues. In 36 control animals, the average life was 57.2 days and in 66 animals vaccinated with this attenuated virus the average life was 154.3 days after virulent inoculations. In the end, the vaccinated animals died of chemic tuberculosis. This may show merely that the disease is not auto-inoculable, as is the case with syphilis.

DISEASES OF THE DIGESTIVE SYSTEM.

UNDER THE CHARGE OF

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Does Bile Possess Antiputrefactive and Antibacterial Properties? Mosse (*Zeitschr. f. klin. Med.*, Vol. XXXVI., No. 6; *Bolnitsh. Gaz. Botk.*, Vol. X., No. 13) endeavored to solve the following problems in relation to this very important subject: (1) Does bile exert any influence on the putrefaction of albumin in the living body? (2) Does it possess similar properties outside of the organism, in the test tube? (3) What influence does it have on the fermentation of grape sugar? (4) Does it

possess any antibacterial properties? To answer these questions, the author performed the following experiments: (1) A dog received with a mixed diet 5 gms. of dried ox gall for a few days, alternating with a similar period when no bile was administered. The etheral sulphates in the urine were determined each time, and it was found that bile exerts no influence on the putrefaction of albumin in the intestine. (2) Two tubes were filled with an equal amount of water, peptone and 10% solution of soda, to one some ox-gall being added. The tubes were inoculated with feces or bact. coli commun., and placed in the incubator for 24 to 48 hours. The contents were then distilled off and the distillate tested for phenol and indol, with the result that the presence of bile seemed to have increased the putrefaction of albumin caused by the bacteria. (3) The fermentation of carbohydrates was also shown to be greater in the presence of bile. (4) The antibacterial properties of bile were determined by adding various quantities of bile to an agar culture of feces, bact. coli commun. or diphtheria bacilli in either alkali or acid medium. It was found that bile does exert a retarding influence on the growth of bacteria, but only when it is sufficiently concentrated, and then the action only lasts for a short time (24 hours). The conclusions arrived at by the author are, that bile does not decrease putrefaction, but, on the contrary, increases it, and that its retardation of bacterial growth is only temporary. Its administration would, therefore, be, *a priori,* contraindicated in auto-intoxication resulting from intestinal putrefaction.

On the Influence of Medication on Gastric Secretion. Riegel (*Allg. Wien. Med. Zeit.,* June 13, 1899) read a very interesting paper before the Congress of Internal Medicine in Karlsbad, bringing forward experiments performed by him on man and animals which establish the fact that atropin given internally inhibits, while pilocarpin increases the secretion of gastric juice. When animals operated on according to the method of Paralow were fed on 1 liter of milk, 2 hours after the meal, 16 c.c. of pure gastric juice were obtained from the secondary stomach; but when atropin was administered, the amount of gastric juice diminished to ⅛ or $^1/_{16}$. The acidity was also diminished from ½ to $^1/_3$. On the other hand, after the administration of pilocarpin, the amount of gastric juice was doubled or quadrupled. The same phenomena were observed in 80 experiments performed on man.

A Unique Case of Spontaneous Gastro-entero-anastomosis. Dr. Snévé (*St. Paul Med. Jour.,* No. 5, 1899) presented before the Ramsey County Medical Society a *post-mortem* specimen of spontaneous gastro-entero-anastomosis, following a perforating gastric ulcer. This remarkable specimen was from a patient with the following history: "A white male, *aet* 70, of Scotch extraction, was seized with a profuse hemorrhage from the stomach 10 years ago, which nearly cost the patient his life and kept him confined to his room and bed nearly a whole year. After this attack, the patient suffered frequently with intense pains in the epigastrium, which were only relieved by vomiting, or by having the stomach washed out

thoroughly. These colicky pains were never wholly absent except when the stomach was entirely empty or when there had been free evacuations from the bowels. Many physicians were consulted, but no permanent relief obtained. The appetite was always good and the bowels responded well to pulv. glyzyrrh. com. His heart grew weaker and weaker, until he died of inanition." This stomach is an illustration of a gastro-entero-anastomosis which has not been achieved by means of suture, bone plate or a button, but was attained through the agency of benevolent nature. The usual result of a perforation from a gastric ulcer is a localized peritonitis with formation of a mass of scar tissue and frequently adhesion to other organs, but a perforation into the hollow viscera, and formation of a permanent anastomosis, as in this case, is unique. This condition must have existed about 10 years in the patient. A loop of the jejunum was caught up near the pylorus, and adhesions formed to the postero-superior and antero-inferior surfaces of the stomach; perforations, exudations and a permanent anastomosis followed. The duodenum was surrounded posteriorly by this localized exudative peritonitis, and the opening of the ductus communis choledochus was only an inch from the pylorus.

MEDICAL DISEASES OF THE KIDNEYS.

UNDER THE CHARGE OF
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Chronic Malarial Nephritis, with Report of a Case. Larned, (*Johns Hopkins Hosp. Bull.*, July, 1899) states that there were two points of great interest in the above case: (1) The fact that the infection was of a quartin type, the rarest of the 3 recognized forms of malarial fever; (2) the associated nephritis, which was almost certainly dependent upon this, or a previous malarial infection. It is well known that malarial fever is an important factor in the production of nephritis, and out of 758 cases treated at the Johns Hopkins Hospital 21 instances of acute nephritis were found. The case, a child, was admitted to the hospital, and on examination was found to have marked edema of the face, genitalia and ankles, abdomen was distended and exhibited the usual signs of ascites, teeth irregular and notched, but no pegging; tibiae rickety; heart action rapid—128 per minute; apex not displaced, no murmur, slight accentuation of aortic and pulmonic sound. Rales over both bases of lungs with marked puerile breathing everywhere, respiration 46 per minute, thoracic in character, temperature 99°F. Paracentesis abdominis was done and 3 quarts of turbid fluid was removed and on abdominal palpation the spleen was found 5 cm. below the costal margin. On examination of the blood, the diagnosis

of malaria was made, and quinin given. Urine was slightly cloudy, acid, sp. gr. 1,010, on boiling almost a solid precipitate was thrown down. Microscopically there was hyalin, fine and coarsely granular, also epithelial casts, a great deal of detritus, no red cells, a few leucocytes and epithelial cells. The child gradually improved, although the amount of albumin was always high. Six months afterward the author was called to see the child, and found her profoundly comatosed; pulse 160. She had had several convulsions during the previous 5 hours and died in one. The conclusions to be drawn from this case and others already reported are: (1) Certainly in some localities malarial fever should be given a prominent position in the etiology of chronic as well as of acute nephritis. (2) In all cases of malarial fever the urine should be closely watched. (3) A blood examination should be made in all cases of nephritis occurring in those who have visited or lived in a malarial district, as it often happens that the severe grade of nephritis resulting may mask entirely the clinical picture of malarial fever.

Sarcoma of Kidney. Baldwin (*Cleveland Med. Gaz.*, Aug., 1899) reports 3 cases of sarcoma of the testicle and 1 case of sarcoma of the ovary, developing either previously to, or simultaneously with, sarcoma of the kidney. He believes that the renal growths were not the result of metastasis, and suggests that the association is but the expression of a disease independently attacking different tissues that have a common embryonic parentage. As growths of the left kidney and splenic enlargement are frequently confounded, the author describes a useful means of differential diagnosis. The enlarging kidney tends to separate the folds of the descending mesocolon, so that the colonic tympany is in front of or to the outer side of the renal enlargement, while the enlarging spleen must, from anatomic reasons, lie to the outer side of the colon. Inflation of the colon may aid this practical point in the differential diagnosis.—W. B.

DERMATOLOGY.

UNDER THE CHARGE OF

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Syphilitic Reinfection (in a Physician). Oustinoff (*Annal. de Dermatol. et de Syphilog.*, Feb. 1, 1899) reported before the Syphilographic and Venereologic Society of Moscow the observation of a case of reinfection in a confrère. The first time, in 1890, there appeared an indurated chancre, which was followed by syphilides, the diagnosis being confirmed by Prof. Pospeloff. In 1891, an ulcerated gumma of one tonsil made its appearance, and this was the last manifestation. In January, 1898, there developed,

after a suspicious coitus, a new syphilitic chancre, which was soon followed by a characteristic roseola and a plantar papular syphiloderm.

Black Tongue. Vollmer (*Annal. de Dermatol. et de Syphilog.*, Feb., 1899) exhibited before the Berliner Dermatologische Gesellschaft, microscopic preparations of a case of black tongue from a patient who had syphilis the preceding year. The entire surface of the tongue has a black tint. Under the microscope were found white blood corpuscles, typical salivary corpuscles and special corneous productions. The affection consists of a hypertrophy of the lingual mucous membrane with developments of the epithelial layer of each papilla. The patient declares that his tongue was black before the syphilitic infection. Nevertheless, in more than one-half of these cases, there is an antecedent history of syphilis.

Tinea Tonsurans of the Scalp in an Adult Man. Abraham (*Brit. Jour. Dermatol.*, Apr., 1899) exhibited to the Dermatological Society of Great Britain and Ireland a man with ringworm of the scalp. He remarked that "certain authorities, especially abroad, had stated that tinea of the scalp never occurred in adults; but that was not the experience of dermatologists in this country; for, although the condition is extremely rare, some of us had occasionally encountered such cases." The present case was the fourth that the author had seen within the past 14 years. The first was in a woman, aged 30, both of whose children he was at the same time treating for the disease. The case proved a most difficult one to cure. Another case occurred in a medical student, 21 or 22 years of age, in whom the scalp lesion was well marked. This patient was soon cured. The third was in a woman, who had a tinea circinata at the nape of the neck which spread upward to the scalp. The present patient had just recovered from an amputation of the arm at the shoulder joint for tuberculosis. He left the hospital in December, and a week or two afterward he observed a rough patch with loss of hair on the back of his head. A week later the daughter of the patient developed a similar patch. Hairs from the man's patch exhibited an abundance of trichophyton megalosporon endothrix. The large spore was also present in the medical student, and probably in the others.

Diseases Affecting the Nails. Jonathan Hutchinson (*Med. Press and Circ.*, July 26, 1899), in a clinical lecture delivered at the London Hospital, discussed some of the important diseases affecting the nails. He states as a general rule that the character of nail lesions depends not only upon the original disease of which they are an extension, but also upon the thickness and strength of the nail itself. The thicker the nail, the more distinct usually are the lesions. Certain marks and grooves upon nails mark the date of some severe attack of illness. These vary from transverse white lines, curving across the substance of the nail, to deep grooves, and even hemorrhagic stripes. The author exhibited a water-color drawing of the hand of a young man who had had a number of "bilious" attacks, characterized by headache, anorexia, coated tongue, etc., each followed by the appearance of broad transverse grooves across all of the nails. Such grooves are by no

means uncommon, especially after febrile and gouty attacks. In most cases it is only upon thick, strong nails that this phenomenon occurs; thin, brittle nails being largely exempt. The grooves grow out and toward the free edge of the nail, and are then shed. Psoriasis and eczema have each their characteristic mode of affecting the nails. These may be roughly distinguished by saying that psoriasis usually attacks the free border, nail bed and under surface of the nail, and spares the upper surface; whereas eczema generally attacks the root and folds of the nail, and roughens and pits the upper surface. An inflammation of the nail bed extending under from the free or distal margin, loosening the nail at its tip and often accompanied by an accumulation of epidermal scales beneath the nail, is not an uncommon symptom in the course of a general psoriasis. This form of nail disturbance may, however, be the only symptom of the disease, and its nature then is proven by its yielding promptly to arsenic. In eczema, the disease begins at the root or folds of the nail, and affects its substance and surface much more severely. Longitudinal thickenings and furrows are often produced, the nail is opaque and dirty looking, and its surface rough, often stippled all over, as with a series of shallow pin pricks. It is a much more serious and disfiguring disease than psoriasis of the nails. There is a form of senile psoriasis of the nails—fortunately quite rare—which is extremely severe. Spreading from the nail bed, it causes ulceration of the finger tips, and even leads to gangrene. It also affects the toes, and may cause so much pain as to render walking impossible. In clubbed fingers the nails are greatly enlarged, both in length and breadth, while in acromegaly the fingers are enlarged, but the nails are unaffected. This may be used as a diagnostic point in discriminating between the two conditions. There is a pustular disease of unknown origin which attacks the nails of children. Red spots appear in the nail substance, form minute abscesses, and break through the surface of the nail. These pustules appear in crops and are quite likely to recur. Ringworm affects the nails at times in a very similar manner, painful spots appear in the nails, and then pustules form, which break through the surface. As a rule only one nail is affected at a time, and the disease spreads slowly and obstinately from one to another. The condition is apt to be associated with ringworm of the body or scalp.

Syphilis in Russia. Dr. Livshitz, who was sent by the Society for Preventing Infectious Diseases to investigate the spread of syphilis in the district of Minsk, examined 23,137 persons—6,493 men, 8,139 women and 8,505 children. Of these 1,244, or 5.02 %, were found syphilitic. Of the forms of syphilis, a hard chancre was found in 4; 323 with secondary, and 917 with tertiary lesions. Of 40,207 peasants examined, 1,694 were syphilitic, 5 suffering from an initial lesion, 468 secondary and 1,221 tertiary. In the city of Minsk 4,931 persons were examined, 96 having been found syphilitic. Of the entire number of syphilitics, 1,790, 831 were men, 778 women and 181 children.—*Vratch.*

PEDIATRICS.

UNDER THE CHARGE OF

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The Etiology of Scarlatina. W. J. Class (*Medicine,* June, 1899) briefly rehearses some of the attempts that have been made to isolate the specific germ of this important disease. He lays stress upon the observation of Behla, viz., that several pigs exhibited a scarlet rash followed by desquamation; and this at a time when scarlet fever existed in the family of their owner. During the winter of 1897-98, the writer examined some 700 or 800 cultures, taken from the throats of as many sufferers with angina. He occasionally found large diplococci; and later he observed that these organisms developed most frequently in cultures from scarlet fever patients. From the results of his subsequent experiments, he has been led to believe that the germ noticed is probably the specific causative factor of scarlet fever. *Morphology.*—The organism is a diplococcus, polymorphous in character, but resembling under standard conditions "a very large gonococcus." Tetrads are occasionally seen. Multiplication occurs by subdivision. Streptococcus forms are occasionally met with, and perforce of the large amount of gelatinous intercellular material, these cocci may be congregated in bunches of from 10 to 50. The organism has no capsule, though it appears to have at one stage of its growth. *Staining.*—The writer has stained with a watery solution of methylene blue, with carbolfuchsin, Bismarck brown and Pitfield's flagella stain. It is decolorized by Gram's method, but not to the same extent as the gonococcus. *Biologic characters.*—The best culture medium in Class's experience is a glycerin agar solution, containing 5% of sterile black garden earth. The preparation of this medium is carefully described. He cultivated this germ from the scales of 74 cases of scarlet fever, from the throats of about 50 patients and from the blood of 16 persons, all suffering from scarlet fever. Cultures grown from blood taken on the first day usually grew quite readily. Later in the disease the growth becomes meager. The author then performed careful control experiments, taking cultures from the skin, throat and blood of supposedly healthy individuals. The blood tests were always negative. *Pathogenesis.*—Normal rabbits and guinea pigs were not affected by inoculation of pure cultures of this diplococcus. Two guinea pigs in a depressed state of vitality became sick and died, however. The autopsies upon these latter revealed acute nephritis, and pure cultures of the organism under discussion were obtained from the diseased organs. Class injected 5 pigs, 4 through a vein in the ear, and 1 in the abdomen; 4 animals exhibited fever, an eruption and subsequent desquamation. The first one was

killed, and revealed practically the kidney changes observed in the guinea pigs. The last pig showed nothing but a slight rise in temperature. The author then differentiates between his germ and various structurally allied organisms found in the skin, throat and naso-pharynx.

Why the Child Strains at Stool, and the Way to Its Relief. P. C. Martin (*Columbus Med. Jour.,* June 13, 1899) advances the following anatomic reasons in explanation of difficult defecation of infants and young children: (1) The infant gut is very deficient in muscular fibers, and hence lacks the degree of peristaltic power possessed by the adult intestine. (2) The mesentery of the sigmoid flexure and part of the rectum is relatively much longer than that of the adult, the sigmoid mesentery often being longer than the distance from the promontory of the sacrum to the end of the coccyx. This fact, coupled with the disproportionately great length of the descending colon and sigmoid, increases the possibility of angulation of the gut. (3) The rectal valve or valves may offer resistance to the passage of feces. (The author believes firmly in the existence of these valves, having observed them in more than 300 cases.) (4) The outlet of the infant's bony pelvis is so contracted that anal expansion is exceedingly limited. The writer then deals with the accidents of inguinal hernia and anal prolapse, showing that they are largely dependent upon the same immature conditions of the infantile alimentary tract. Treatment: Diet, hygroscopic suppositories, fluid enemata and massage are the measures which should be directed against constipation in infancy. Dilatation of the contracted pelvic orifice may be accomplished by introducing the "trained finger" into the rectum. Martin also deals with the treatment of hernia and infantile prolapse.

The Question of Gruels in the Feeding of Infants. Chapin (*Med. Rec.,* Aug. 5, 1899) treats this question in a convincing article. He made careful test-tube tests, and careful experiments upon dogs with gastric fistulae, all of his experiments showing conclusively that a finer curd and more perfect digestion of casein obtained when decoctions of gruels were given with milk. Clinical evidence has amply confirmed these experimental results, and Heubner, with his enormous experience, has come to the same conclusions. The author believes that infants can digest a small amount of starch. Later analyses of cereals, however, show that they contain less carbohydrate than was formerly supposed, and the starch in these grains may be dextrinized by the use of a diastatic decoction, such as Chapin describes.

Absorbing Capacity of Children. W. Jakubowitsch (*Med. Obos.*) states that absorption by the gastric mucosa is much diminished immediately after lavage of the stomach. Elevated temperatures reduce the absorbing capacity of the stomach and rectum. Absorption by rectum is slowest in the infant and most rapid between two and four years of age. Aqueous solutions of potassium iodid are not absorbed by the normal skin.—*Journal of the Association.*

THERAPEUTICS.

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Toxicity of Strychnin. Todd (*Phila. Med. Jour.*, May 20, 1899) mentions a case of a child, 20 months old, accidentally swallowing a tablet containing a $^1/_{20}$ gr. strychnin sulphate; child died within an hour in convulsions; *post-mortem* showed no gross pathological change, except some congestion of the pia.

Sulphuretted Hydrogen as a Germicide. Noskowski (*Le Progrès Med.*, May 27, 1899) used this gas in a number of different diseases, and believes it to retard germ growth in the body, thereby lessening the amount of toxin formation, and in this way alleviating or curing the case. In reporting his cases he has tabulated them and separated them into classes, viz.: (1) Infections of intestinal tract—such as typhoid fever (18 cases, all cured), cholera (17 cases), diarrheas, dysenteries, etc.; (2) general infections—measles, malaria (4 cases—3 cured, 1 died), influenza, erysipelas (7 cases—7 cured); (3) infections of the respiratory tract—coryza, bronchitis, pneumonia, phthisis, etc.; and under (4) another class—croup (13 cases—8 cured, 5 died) and diphtheria (48 cases—39 cured, 9 died). Even in phthisis the cases were benefited to a great extent, and some cured. The method of administration was as follows: Where given by the mouth, a capsule containing sulphuret of soda, followed by a solution of tartaric acid (the acid thus liberates the H_2S in the stomach and intestines and does away with the disagreeable odor during administration). When given by the bowel, the same method was employed, except that a larger quantity of water was added. In diseases of the chest an apparatus was used so that the patient could breathe this gas and receive only a small supply—too much causing suffocation.

A Severe Case of Puerperal Sepsis Treated by Antistreptococcus Serum and Unguentum Crede. Voorhees (*N. Y. Med Jour.*, June 17, 1899). The case was a very severe one of sepsis, following labor, adherent placenta, with chancroidal ulceration of the vulva. After delivery, the patient's condition was poor, and 4 days later she developed an abscess in the left vulvo-vaginal gland; the uterine discharges were very foul, several smaller abscesses developed later and also phlebitis (left leg). Cultures did not show streptococci, but a short bacillus, which seemed to be the colon bacillus. Nine injections of 10 c.c. of serum, 2 a day, were given, but no result was noted. She was then put upon inunctions of

unguentum crede, which was continued 2 weeks, with some improvement; finally, she developed an intermittent pyuria and a general arthritis. This, however, subsided, and the case was discharged 80 days after labor.

On the Use of the Valerianates of Creasot and Guaiacol in the Treatment of Pulmonary Tuberculosis. Briggs (*N. Y. Med. Jour.*, May 20, 1899) has used these drugs in phthisis, and reports 4 cases in which marked improvement was noted. His conclusions are: That they are more beneficial than creasot, and can be given in smaller doses; the appetite improves, showing less impairment of digestion; the sedative action of the valerianates controls the nervous symptoms to a great extent. Hemoptysis and tuberculous enteritis are, generally, prevented. The dose is from 10 to 30 drops.

The Treatment of Typhoid Fever with Chloral. Dumont (*Jour. de Med. interne,* Apr. 15, 1899) believes it to be very useful in relieving the restlessness that accompanies high fevers; and that, when thus quieted, the patient's strength is saved. The dose given was about 15 to 30 grs.

Cretinism and its Treatment. Pillsbury (*Annals of Gynecol. and Pediat.,* Vol. XII., No. 8) reports a case which had been upon different forms of extracts of thyroid glands (glyceroles, powders and tablets) for a number of years, with little or no improvement. He, therefore, decided to put the case upon the gland itself, taken from the sheep, immediately after killing, under strict aseptic conditions. He started with $\frac{1}{3}$ of a lobe, which is equal to a $\frac{1}{2}$ gr. thyroid principle, and gradually increased, until the child could take a $\frac{1}{2}$ lobe (8 gr. p.) 5 days a week; this rise in dosage had to be brought about carefully, as the child often showed manifestations of overdose (rheumatic pains, hysteria, spasms and sleeplessness), which were allayed by such drugs as bismuth, salol, soda bicarb. and hypnotics. Knowing that one of the thyroid principles contained iodin, and thinking that stimulating the gums might cause a more rapid growth of teeth, the tincture of iodin was used, but this caused too much gastro-intestinal disturbance and had to be stopped; the Syr. of Hydro-iodoic acid was substituted, with good results. The author believes that when the gland cannot be obtained the extracts should be used. The above failure was not so much due to the preparations employed, as to the parents' fear of giving an overdose. At the age of 8 the child was, in all appearance, an infant, while, under 18 months of treatment, the child could stand alone, take notice, laugh and show temper. The reason sheep were selected was that their glands resemble more the structure of human thyroid. Although the diagnosis of cretinism was easy, this case was overlooked for 5 years. In dealing with the cause, the author refers to the different theories—heredity, consanguinity, dipsomania, syphilis, drinking water, etc. The experimental history of cases where thyroid glands have been implanted in animals suffering from artificial cretinism show that where the gland does not undergo necrosis, or become encapsulated, it usually takes on its proper function; but so far it is not justifiable to suggest transplantation as a remedy.

Holocaine as a Local Anesthetic in Eye, Ear, Nose and Throat Operations. Guttmann (*N. Y. Med. Jour.,* June 17, 1899) in a series of cases used 2 drops of a 4% solution of cocain in one eye, and 2 drops of a 1% solution of holocaine in the other; he did not find any difference in the time required to anesthetize, as asserted by Scherer to be much earlier in holocaine, and in the majority of cases the anesthesia lasted longer in the cocainized eye. The eye in which cocain was used was pale and anemic, the bulbus appeared protuberant, pupil dilated, aperture of the lids considerably enlarged: while under holocaine the eye was red and inflamed, the other symptoms above noted were not observed and accommodation was retained better. Applying it to the throat the objectionable bitter taste, as well as the burning, was not noticed under holocaine; and when used for a case of phthisis laryngitis the patient expressed more satisfaction. The same result was noticed when the one drug was applied to one side of the nose, and the other one to the opposite side. In cases where the surface is vascular, or in operations on the eyes of old people, cocain, on account of its being a vaso-constrictor, no doubt is more useful. The physiology of the drug he has taken from Heintz (*Klin. Monatsbl. f. Augent,* 1897).

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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On the Agglutination of Red Blood Corpuscles and Its Causes. Tshistovitsh (*Bolm. Gaz. Bot.,* Vol. X., No. 19) calls attention to the fact that the blood of one species of animals is not only poisonous, when injected, to animals of another species, but that the serum of the injected animal will agglutinate the red blood corpuscles of the blood of the animal which furnished it. Moreover, an animal which is ordinarily killed by the blood of another may be immunized to it by repeated injections. Thus, for instance, the blood of the common eel is so poisonous to rabbits that 0.1 c.c. injected into the latter will cause death in 3 to 5 minutes, but by repeated injection, gradually increased, the animal will become immunized. When the serum of the blood of the immunized animal is mixed with the defibrinated blood of the eel, the red blood corpuscles become agglutinated, forming islands with clear intermediary spaces, and finally the hemoglobin is entirely dissolved out. This phenomenon is identical with the one observed in the agglutination of specific micro-organisms. It is therefore reasonable to suppose that the agglutination of red blood corpuscles, like that of bacteria, is a biologic factor determined by the antitoxins which are produced in the blood. These antitoxins are usually divided into three classes: To the first belong the antitoxic substances which neutralize poisons; the second embraces (1) substances contained in prophylactic serums and which are of

the nature of stimulants; and (2) agglutinating substances nearly related to, but not always accompanying the former. Finally, the third class comprises the bactericidal substances, or similarly those which destroy the red blood corpuscles. These latter are the least stable. What causes the agglutination of the red blood corpuscles? The author found that when the blood of the eel is mixed with the serum of an animal rendered immune to the former, there is soon formed a cloudiness, followed by the formation of a copious sediment. This sediment, under the microscope, looks like agglutinated bacteria, but in reality it consists of an albuminous body readily soluble in dilute acids or alkalies, insoluble in water. This phenomenon is absent when the toxins are mixed with normal serum. Similar facts observed in connection with the agglutination of microorganisms led Nicolle to the conclusion that the agglutination is brought about by the bacteria becoming enveloped in this albuminous substance, which causes them to adhere to each other. This theory, however, meets a strong opposition in the fact that the author succeeded by prolonging the immunization in producing an antitoxic serum which, while possessing agglutinating properties, did not produce any sediment when mixed with the toxin. Moreover, in the case of bacteria, the view of Nicolle meets with another objection in the fact that the bacilli of tetanus is subjected to agglutination by the antitoxin, while when the bacilli are filtered out and the filtrate mixed with the antitoxin, no sediment is observed; and even in the case of bact. coli, typhi, pestis, spirillum cholerae, b. pyocyaneus, etc., where sedimentation does occur, the latter takes place long after the agglutination, and the two phenomena, therefore, bear no causative relation to each other. The view of Gruber, who supposes that agglutination is due to certain changes taking place in the membranes enveloping the bacteria, is also untenable, since, in the case of the red blood corpuscles, which do not possess any cell wall, the agglutination could not be thus explained. The author, therefore, comes to the conclusion that the cause of agglutination is resident in the bodies themselves and not in the surrounding medium.

A. R.

Demonstration of the Fungus of Actinomycosis in Dry Pus. Lemiére (*Jour. Des Sci. Med. De Lille,* July 15, 1899) calls attention to the possible demonstration of the ray fungus in pus which has been dried. Bécue believed that under ordinary conditions the fungus underwent rapid alterations after removal from the living body, and that after 24 hours it became difficult, if not impossible, to demonstrate the presence of typic ray fungi. Lemiére has succeeded in demonstrating the presence of the fungus in dessicated pus, kept in the laboratory for 7 years without any special precautions. While the parasite ordinarily is not abundant in the discharge from actinomycotic lesions, it is to be remembered that, while it may not pullulate outside the body, the possibility of its retaining viability renders the likelihood of infection great over a long period of time. In many of the stock-raising sections of this country the increasing prevalence of "lumpy jaw" has been remarked. The fact that man is susceptible to the disease, and that actinomycosis is manifestly becoming more frequent in

man, should lead to greater precautions in order to limit its possible dissemination. Legislation looking toward the suppression of actinomycosis has been too long delayed. The establishment of such a long period of viability should arouse interest and lead to active preventive measures. Prior to the disintegration and external opening of the actinomycotic lesion, it is not believed that the animal will communicate the disease. After this time, however, the danger becomes great. It is therefore apparent that the animal should be killed before external ulceration ensues. The best laws on the subject prohibit the use of the meat of such animals, even when there is no evidence of systemic infection. It is barely possible that such a precaution is unnecessary, and that where the lesion is strictly local it may be safe to consume the meat. Upon this sanitarians are not agreed.

The Vegetable Parasite in Cancerous Affections. Chevalier (*Gaz. des Hop.,* May 30, 1899) reports the successful cultivation of the cancer parasite. Germs were obtained (1) from fresh specimens removed during life, (2) from the lymphatic glands removed at autopsies, (3) from the blood in advanced cases, (4) from the air of the rooms occupied by cancerous patients. The author does not state definitely that the organism fails to grow upon ordinary culture media at first, but secures his initial cultures in bouillon made from the mamma of the cow. The medium should be as nearly neutral as possible and should have added to it 2 parts of sodium chlorid to the 1,000. Such bouillon, inoculated with cancer tissue (in which secondary infection is not present), is incubated at 32°C. After some days there forms a thin, whitish pellicle with clouding of the medium. Later a precipitate forms which assumes a reddish color. After acclimatization in the mammary bouillon the organism may be transplanted to the following media: (*a*) In bouillon made from the mammary gland and containing glucose not exceeding 10 parts per 1,000. (*b*) Agar. On the third day there form small, greyish, slowly-growing colonies, which eventually thicken and assume a rose color. (*c*) Serum. Growth like agar. (*d*) Gelatin. Greyish pellicle without liquefaction; optimum temperature is between 38° and 35° C. The author believes that the rose color is associated with the formation of spores, as after this time the organism is resistant to boiling for 10 minutes. Cultures show a remarkable polymorphism. Unicellular spherules, which may attain a diameter of 12 to 15 μ. Within these spherules the endogenous spores appear, and eventually escape. The sporules resemble small corpuscles 1 μ or less in diameter, sometimes presenting a bacillary form. Irregularly septate mycelia are developed. The organism stains by *bleu de Kuhne,* gentian violet, saffranin, picric carmin and by the method of Gram. Subcutaneous inoculations on guinea pigs, rabbits and dogs produce tumors at the points of injection, followed by cachexia, and at autopsy in some of the cases there is lymphatic generalization and secondary nodules in the viscera. Histologically such tumors sometimes resemble sarcoma and sometimes carcinoma. The author regards the organism as identical with the organism described by Bra in the *Presse Médicale.*

CLIMATOLOGY AND HYGIENE.

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Mosquitoes Considered as Transmitters of Yellow Fever and Malaria. Finlay (*Med. Rec.*, May 27, 1899) finds additional weight added to the theory of the transmission of yellow fever by mosquitoes, by the recent researches of Koch with reference to malaria, and those of T. Smith on the transmission of Texas fever by the tick. The author asserts that not only malaria but yellow fever can be, and is, propagated by the sting of those insects which carry the infection from one patient to another, or from the infected discharges into the food. "The faculty of transmitting the yellow-fever germ," says he, "need not be limited to the parent insect, directly contaminated by stinging a yellow-fever patient, but may be likewise inherited by the next generation of mosquitoes from the contaminated parent." He thus explains many cases of infection on board of ships or places where the disease is not raging. In view of this role played by the mosquito in the propagation of disease, the author suggests that houses be provided with mosquito blinds. The larvae in swamps, pools, privies, sinks, street sewers, and other stagnant waters might be destroyed by a methodical use of permanganate of potash. The patients suffering from yellow-fever should be confined in well-ventilated hospitals with efficient drainage, and protected from mosquitoes. By these and similar means, the author believes, yellow fever may be stamped out of Cuba and Porto Rico, and malaria reduced to a minimum. [With regard to the author's theory, it may well be questioned whether the transmission of any infectious disease from the insects to their larvae has ever been satisfactorily demonstrated.—A. R.]

The Origin and Spread of Diphtheria, and the Sanitary Police Regulations to Prevent Its Spread. Aust (*Deutsche Vierteljahrsschr. f. Offentl. Gesundheitspfl., Zweites H.*, 1899) contributes a very able and exhaustive paper on the subject, concluding with the following summary: *Origin of diphtheria.* (1) Diphtheria is caused by the Klebs-Löffler bacillus, which possesses a distinct behavior, and can be inoculated from man to animal, producing pathognomonic changes at the site of inoculation and internal organs as well as post-diphtheritic paralysis. (2) This bacillus is found in laryngitic croup, in various forms of simple sore-throat, in fibrinous rhinitis, in membranous conjunctivitis, also, occasionally, in the throat of healthy persons. (3) This bacillus possesses an unusual resisting power and is present for a long period in the throat of convalescents. (4)

There is a pseudo-diphtheria bacillus which produces a disease resembling clinically diphtheria, but possesses no virulence on animals. (5) The so-called scarlet-fever diphtheria is a mixed infection of diphtheria bacilli with other micro-organisms, especially streptococcus pyogenes. (6) Diphtheria of open wounds is, as a rule, produced by the diphtheria bacillus.

Spread of diphtheria.—(7) It is an eminently contagious disease. (8) The channels for its spread are various, the chief being: (*a*) The infection is carried from one person to another; (*b*) it is carried by immune to susceptible persons; (*c*) by means of clothes, wearing apparel, upholstered furniture, carpets, books, toys, etc.; (*d*) by food, especially milk, bread, etc.; (*e*) by domestic animals. (9) Especially favorable for the spread of the disease is the assemblage of children, as in schools and similar institutions. (10) Certain customs are also responsible for its spread, such as visiting the bereaved, funeral celebrations, carrying the dead in open coffin, distributing things used by the one who died from diphtheria as tokens. (11) The transmission of the bacillus by the air has not been as yet satisfactorily established. (12) Not all persons are alike susceptible to the infection; certain individuals possess antitoxic substances in their blood. (13) Once having had the disease, the immunizing substances in the blood are increased; similar results are obtained, for a short time, by the injection of antitoxin. (14) Children suffering from chronic diseases, especially tuberculosis and congenital syphilis, have a greater predisposition to diphtheria. (15) Locality plays a very important role in its spread, inasmuch as the bacilli will best thrive and gain in virulence in localities surrounded by bad sanitary conditions. The bad influence of dark, damp dwellings, unsanitary closets and drainage is well established. (16) Certain climatic conditions influence the virulence of diphtheria.

Prophylaxis in diphtheria.—(17) Measures against diphtheria should be instituted before the disease breaks out. To these belong: (*a*) General cleanliness; (*b*) sanitary arrangements of the premises; (*c*) proper dwellings, schools and hospitals; (*d*) special dead-houses to keep those who died of diphtheria, with their compulsory use by the people; (*e*) the propagation of knowledge of hygiene among the people; (*f*) special care to increase the individual immunity by invigorating the body. During epidemics the following measures should be adopted: (*a*) Compulsory notification by physicians and attendants; (*b*) precise diagnostication, by the aid of the bacteriologist if possible; (*c*) careful isolation of the sick in their own houses or in well-established hospitals—eventually compulsory removal to the latter; (*d*) exclusion of the children of the infected family as well as those of the neighbors from school attendance until the disease is well over; (*e*) prevention of close association and assemblage of children; (*f*) thorough disinfection of the sick room and everything that came in contact with the contagion—articles of slight value should be destroyed by fire; (*g*) regulation of the transportation of the sick; (*h*) special regulation for the burial of the dead; (*i*) extensive employment of antitoxin as both a curative and prophylactic agent; (*j*) the institution of a personnel of nurses who fully comprehend the necessities of hygiene. (18) To accomplish all this, the co-operation of a well-informed people is especially indispensable.

SURGERY.

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The Lateral Route for the Removal of Cervical Growths. Holmes (*Inter. Clinics*, Vol. II., 9th Series) states that the lateral incision is, as a rule, preferable in operating upon tumors, and collections of pus and blood that approach the median line of the neck. This lateral incision is made along the posterior edge of the sterno-mastoid muscle, and affords greater room, better drainage, and a lessened liability of injuring the pretracheal muscles and the vessels and nerves supplying them than the customary median incision. The only nerves divided are a few of the descending branches of the superficial cervical plexus, and for all deep-seated growths below the upper margin of the thyroid cartilage this incision affords the more satisfactory means of approach. The sterno-mastoid muscle having been retracted toward the median line, the prevertebral fascia forms an excellent posterior boundary to the operative field, while incision of the pretracheal fascia affords access to the anterior part of the neck. The author has had satisfactory results in operating for abscess, sarcoma, and bronchocele through this incision.

An Abdomino-Sacral Method for the Removal of Rectal Carcinoma. Summer (*Med. Rec.*, Aug. 12, 1899) describes a method employed by Krashe in Freiburg for the removal of a malignant tumor, situated high up in the rectum and adherent to the uterus and sacrum. An abdominal incision, 2 fingers in breadth, above and parallel to the left Poupart's ligament, was first made: the abdominal cavity walled off, the peritoneum and meso-rectum divided, a large branch of the superior hemorrhoidal artery ligated, and the gut liberated from its surrounding. The cavity was then thoroughly packed with gauze and the typical Krashe sacral incision made, the involved intestine being readily resected. This operation permits the more complete removal of infiltrating malignant tissue and is especially applicable to highly situated and adherent carcinoma of the rectum.

Hernia Following Operation for Appendicitis. Harrington (*Bost. Med. and Surg. Jour.*, Aug. 3, 1899), after a personal examination of 236 patients operated upon from 9 months to 9 years previously, reaches the following conclusions: "Hernia and bulging occur frequently after

operation for appendicitis, and result from the separation of muscles and other tissues in the scar. They are very common when drainage has been used. The muscular and tendinous fibers should not be transversely cut in any appendix operation unless it is unavoidable. As little drainage material as safety will permit should be used. When drainage is necessary, the wound should be closed as far as possible with sutures and the drainage removed as early as safety will permit. If the wound can be closed immediately the tissues should be restored to their normal position by suturing each layer. Stout belts and trusses are of little value, and may even do harm. The abdominal muscles from the earliest period possible after operation should be developed by appropriate exercises. If hernia or marked bulging appears, operation for cure is safe and satisfactory." In the 236 cases the relation of the hernia to the form of incision is well illustrated statistically:

Incisions.		Punctiform hernia.	Bulging in wound.	True hernia.	
Closed	85	0	2	3	= 6%
Partly closed	88	5	29	11	=51%
Open	63	5	21	13	=62%

A general abdominal bulge of the right side was also found in 7% of the closed incisions, and in 45% and 46% respectively of the partly closed and open incisions. This was attributed to faulty muscular union.

A Plea for Earlier Operation in Knee-Joint Tuberculosis. Jonas (*Jour. A. M. A.*, Aug. 12, 1899) found that of 40 cases of knee-joint tuberculosis under his care, 7 came to resection of the joint surfaces and 2 to amputation. The remaining 31 cases yielded to medicamental and mechanical measures, associated in some instances with joint puncture and evacuation, followed by irrigation or injection, etc. If after 2 or 3 months of mechanical treatment, no improvement is noted, the author's plan is to explore the joint with the finger, and if limited lesions are found to irrigate; if small bone lesions are present to curette; and if exterior articular lesions exist to exsect the joint. Of 7 of the author's cases 6 gave excellent results, the poor result in the remaining cases being attributed to delay. All were adults. The author advocates the transverse incision; finds drainage, as a rule, unnecessary and discards all retentive appliances except a plaster of Paris bandage or Volkmann's posterior splint. Early exploratory incision is especially advised as a harmless and most useful procedure.

Total Obstruction of the Bowel Lasting Thirty-four Days. Fell (*Ind. Med. Rec.*) describes a case of impermeable stricture at the sigmoid flexure, for which operative intervention was refused, with the result that the patient passed 34 days without fecal evacuation and practically without food, death finally resulting. The abdomen became greatly distended, and assumed a bluish mottling. *Post-mortem*, the colon was found to measure 18 inches in circumference above the stricture and contained liquid feces and much flatus, while the stomach and small intestines were found to be empty and contracted.

LARYNGOLOGY AND RHINOLOGY.

UNDER THE CHARGE OF

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L'Asthme des Foins et les Rhinites Spasmodiques Vaso-Motrices. (Hay Fever, Hay Asthma, and Spasmodic Vasomotor Rhinitis.) Molinie (*Gaz. des Hop.*, No. 52, 72d year) reviews these affections in apposition, finally unifying them, except in their etiologic factors, the essential difference being the periodicity of the former as contrasted with the irregular and sporadic occurrence of the latter. The history, symptomatology, etiology and pathology are clearly and succinctly given. Only the desire to give that which is most useful compels us to pass directly to the treatment of these affections. This should consist in the breaking of as many links as possible of the chain of pathologic conditions surrounding the condition. Any diathesis should be combated. For plethora, a rigid and limited dietary should be ordered, alcoholic drinks interdicted, moderate exercise enforced, and purgation and blood-letting should be resorted to. Should eczema be encountered, it should be relieved by the internal administration of arsenic. Colchicum should be ordered for the gouty, and also a special hygienic therapeusis. To the neuropathic should be administered such tissue builders as the glyco-phosphates, fluid extract of kola, and valerianate of ammonia. Health resorts, medicinal springs or baths should be recommended to the arthritic, obese, constipated, eczematous, hemorrhoidal or those below par for any reason. The active irritant cause should be removed when possible. As a local treatment, some one (Carl Genth) has advised applications of corrosive sublimate, 1:3,000 to the nasal mucosa. The intra-nasal application of vaselin, pure or with menthol, has given ease. Chlorohydrate of cocain in solution 1:30, or used with an inert powder 1:10, has given good results; but the necessity of increasing the dose and the consequent danger of intoxication or the acquiring of the cocain habit rendered this procedure dangerous. Lightwitz has recently used orthoform with as great success as cocain, and without the danger of intoxication. Agents possessing vasomotor constrictive power, as the extract of suprarenal capsule, are of use. But, among the local treatments, a special place should be reserved for nasal cauterization, as much for the polemics this method has aroused as for the result it has procured. This treatment obtained considerable vogue after Hack's work on nervous reflexes of nasal origin, when he demonstrated that certain forms of asthma could be cured by ablation of nasal lesion. Since this time the operation has been much abused. There are certain nasal lesions, such as polyps, deviation of the septum, hypertrophy of the turbinates, etc., in which operative interference is absolutely indicated to insure nasal breathing, if nothing more. In

others, however, what should be our procedure? We have shown that at least 50 to 60 % of cases are benefited by cauterization. The benefit derived may be accounted for in one of three ways: (1) In some cases the sensitiveness of the mucosa is thus lessened, and dust, luminous impression, dry temperature, living near the railroad, fail to affect their usual results. (2) In others, cauterization has a revulsive action, inhibiting and counterbalancing the influence of the usual excitants. (3) Finally, we think the treatment acts by suggestion in the nervous. The cautery may be applied in various ways. After cocainization the inferior or middle turbinate may be the seat of linear cauterization, surface cauterization or igni-puncture. Sajous has used applications of glacial acetic acid instead of the cautery, with good results. In rebellious cases Moure (of Bordeaux) has obtained results by decortication of the inferior turbinate. [*Note.*—The numerous remedies suggested above show conclusively that each individual is a law unto himself, necessitating the special study of individual cases, and that no one treatment will answer for all.]

Treatment of Hay Fever. Douglas (*Med. Rec.,* Vol. LV., p. 474) divides cases of hay fever into two grand classes, those with nasal lesions and those free from these lesions. The treatment is divided into (1) Treatment of the cause—many patients doing well in high altitudes or on islands about 20 miles from the mainland. Vasomotor disturbances should be treated by daily cold sponging or spinal douches and the internal administration of small doses of quinia and digitalis. Nervines have not been of use, and opium is warned against. Proper use of exercise, rest and change of occupation and environment, with care as to diet and elimination, will aid materially in the treatment. (2) Local and general treatment of the attack. The membrane should be sprayed with a 1% solution of cocain, followed by a douche of salt solution 1 dr. to 1 pt. of water at a temperature of 106° to 114°. Two quarts of the solution should be used with the bag 6 inches above the head, and the patient instructed to breathe deeply and freely and to avoid any effort at swallowing. After the douche, pledgets of cotton, saturated with 4% cocain, should be packed against the offending parts for 4 minutes and then removed. After this silver nitrate 10 grs. to the ounce, or phenol camphor (2 parts camphor, 1 part carbolic acid), or Clarke's solution, which is as follows:

℞ Corrosive sublimate, ... 1 gm.
Quinin hydrochlorate, ... 1¾
Glycerol carbolic acid (B.P.), ... 1¾

The home treatment should consist in the use of the hot douche. After subsidence of the acute symptoms, an oily spray, as 2 gms. of menthol, 1 gm. of eucalyptol in 1 fl. oz. of albolene liquid may be used. Suprarenal extract internally has been found almost specific in the disease, whether used internally or locally in spray form. The action is always satisfactory. The tablets should be given to adults every 2 hours, day and night, until some prostration or dizziness is felt, or until examination shows the vasomotor paralysis has been controlled. After this the remedy should be given every 3 to 6 hours, and finally 2 doses a day should be kept up throughout the hay-

fever season. If the spray is employed, it should be used every 3 hours. During the intervals between attacks, the nasal defects should be corrected. In the debate following the paper, sodium salicylate or Lugol's solution of iodin, 5 to 20 drops well diluted in water, or the iodids were said to act well if there was much congestion of the pharynx. A syphon of seltzer could be used instead of the alkaline douche.

OPHTHALMOLOGY.

UNDER THE CHARGE OF
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The Surgical Treatment of High Myopia. Würdemann (*Ann. of Ophthalmology,* Apr., 1899), after an exhaustive review of the literature of this subject, and the report of several cases in which extraction of the lens was performed, states as advantages of operation: (1) Increase in the visual acuity; (2) larger retinal images; (3) enlargement of the visual field; (4) increased range of vision for near work with correction; (5) reduction of strength of glass, and hence in the bulk and optic defects so common in strong lenses; (6) displacement of pupil nearer the nodal point. The author gives the following resumé of the subject: (1) Surgical treatment of myopia should be limited to those cases over —12.0 D, who suffer great inconvenience from their correcting lenses. The ideal cases for operation are those of —17.0 D to —18.0 D. (2) The operation is mainly indicated in young adults. (3) Cases having active disease and changes in the ocular structures, such as progressive myopia, choroiditis, fluidity of the vitreous or detachment of the retina, are not applicable. (4) The dangers are offset by the advantages. The present status of the operation among ophthalmologists generally, especially in this country and in Great Britain, will not warrant Würdemann's last conclusion. Certain it is, that the danger of retinal detachment and other bad consequences of removal of the lens from a diseased and distorted eyeball are so serious that they awaken grave doubts as to the advisability of such a radical procedure in the minds of American oculists who have patients wearing lenses of —S. 20.0 D and even higher strength with comparative comfort. Already several cases in which great improvement was expected from the immediate optical results of operation have been reported as failures from subsequent retinal detachment.

The Etiology of Iritis. H. H. Brown (*Ann. of Ophthalmology,* Apr., 1899) believes that a majority of all cases of iritis, ranging from 55 to 65 %, are due to syphilis, and a smaller proportion, varying from 10 to 20 %, may be accredited to arthritic toxins. The small percentage left is caused by various constitutional and infective disorders, with also a strong probability of the existence occasionally of a true sympathetic or neurotic iritis, entirely distinct in its origin from any infectious cause. Traumatic iritis is excluded in the paper. Brown also thinks that there is a wide range for speculation as to the mode of action of infections of the iris, but at the

present time the facts seem to point to the action of bacterial products or toxins, rather than to that of the germs themselves. In only a few cases have characteristic bacteria been found directly in the inflamed iris; in others only the ordinary pus cocci are present to indicate a secondary infection.

Oculo-Motor Paralysis from Typhoid Fever. G. E. de Schweinitz (*Jour. of Nerv. and Mental Dis.*, June, 1899) reports a case of this nature in a man of 22. About one month after the initial symptoms, and after convalescence seemed to be established, the patient was attacked with a relapse, and on the third day showed complete right oculo-motor paralysis, with ptosis. The patient recovered from the illness and at the time of report, 6 months later, by strong effort he could overcome the divergence, while upward rotation had become normal and downward rotation had gained 10°. These cases generally occur during convalescence. Dilatation of the pupil and paresis of accommodation are not uncommon, while mydriasis without cycloplegia with normal vision may be the result of irritation of the sympathetic. Paralysis of the extra-ocular muscles is much rarer, and in the absence of intracranial complications seldom occurs in the height of the disease. Certain muscular paralyses have occurred at long intervals after typhoid fever, but the connection between the palsy and typhoid poison in such cases is very doubtful. Kniess believes extra-ocular palsies from typhoid fever are due to nuclear lesions, and attributes them to a chronic nephritis, which he thinks is a frequent sequel of typhoid fever. West believes that in mild attacks of typhoid in children, accompanied by temporary strabismus and retraction of the head, there may be a causal basilar meningitis of slight severity. True meningitis is very rare. According to the Munich record, quoted by Osler, it occurred only 11 times among 2,000 cases. Excluding meningitis, these cases of extra-ocular palsy after typhoid may be attributed to the poison acting directly upon the nervous system, affecting, for example, the oculo-motor, precisely as it may cause neuritis in the extremities.

Post-hemorrhagic Blindness. Theobald (*Johns Hopkins Hosp. Bull.*, May 1899) reports a case of atrophy of both optic nerves, following severe hemorrhage of the stomach in a man of 57. After an inquiry into the literature of the subject, and a careful consideration of the case under his observation, he concludes: (1) That the weight of evidence afforded by the ophthalmoscope points to thrombosis of the central retinal artery as the usual cause of blindness which occurs in post-hemorrhagic anemia. (2) That the resistance offered to the already enfeebled blood current in the central retinal artery by the intra-ocular tension is an important etiologic factor in determining this result. (3) That, in exceptional instances, the ophthalmoscope indicates that thrombosis occurs not in the artery but in the central retinal vein. (4) That, in other exceptional instances, it may be that the loss of sight and the ophthalmoscopic changes which accompany it are the result of a hemorrhagic or serous effusion into the optic nerve or its sheath (Samelsohn). And here, again, the obstruction and damming back of the blood current in the central retinal artery by the intra-ocular tension probably have much to do with bringing about the result.

GENITO-URINARY SURGERY AND VENEREAL DISEASES.

UNDER THE CHARGE OF

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The Treatment of Secondary Syphilis. Taylor (*N. Y. Med. Jour.*, Apr. 8, 1899) strongly urges a more vigorous method of treatment for syphilis, somewhat after the Ricord plan, in vogue prior to 1870, rather than the prolonged "tonic" treatment, which he terms "Emasculated, narrow-gauge, stencil plated." Four reasons are given why treatment should not be instituted until the constitutional evidences of the disease are present. In brief, these reasons are as follows: (1) That by a preliminary course of mercury, the system becomes accustomed to the use of the drug, and its potency as a therapeutic agent is impaired considerably at a time when we need it most, *i. e.*, at the first outbreak of skin lesions. (2) Early treatment does not suppress evolution of the secondary manifestations, but simply retards the orderly course of the disease. (3) It is important that the patient should see for himself that he has syphilis in order to be thoroughly convinced of the necessity for treatment. (4) Errors in diagnosis of genital lesions being so common is another important reason for deferring treatment until secondary manifestations shall appear. Taylor advocates for the first 6 months a vigorous course of mercury, using alternately the protiodid in ½ gr. doses internally 3 times daily and the use of inunctions. This alternate treatment should be kept up continuously for 6 months, at the end of which time a respite from all treatment is taken for 3 weeks. At the expiration of this time the treatment must be kept up for 3 months longer, and it should consist of alternations of the inunction treatment and the dosage with a mild or strong mixed treatment. This method should be carried out, with intermissions when no treatment is pursued, during the second year. Taylor believes that the disease treated in this manner can be cured in 2½ years.

A Groved Perineal Cannula to Be Used as a Guide in Performing Perineal Sections in Cases of Urethral Obstruction. Guitéras (*N. Y. Med. Rec.*, July 1, 1899). This instrument, devised upon the plan of the ordinary trocar and cannula, is intended to be used in tapping the deep urethra behind an impermeable stricture, thus doing away with the uncertain "stabbing in the dark" necessary in the Cock's operation. It consists of a cannula 4¼ inches, and handle 2½ inches, and a trocar 4¾ inches long. The indications for the use of this instrument are enumerated by the author as follows: (1) Cases of impermeable stricture with retention, in which an immediate radical operation is demanded; (2) cases of

ruptured urethra; (3) cases of extravasation of urine; (4) cases of excessive urinary abscess; (5) cases of perineal cellulitis; (6) fracture of the pelvic bones with pressure upon the urethra. In tapping the bladder in the deep urethra an incision is first made in the perineum in front of the stricture, as in the ordinary operation of external urethrotomy. With a finger in the rectum, touching the apex of the prostate gland, the operator pushes the instrument downward and backward through the stricture until the point is felt by the finger in the rectum. If there is retention of urine, the trocar can be removed and the bladder readily emptied.

The Signs of Inherited Syphilis. Dawborn (*N. Y. Med. Jour.*, Apr. 8, 1899) gives 27 signs of hereditary syphilis, of which the most characteristic are: (1) The "old man" appearance of the face, together with the sallow color of the skin. (2) Bullous or pemphigoid eruptions about the buttocks. (3) Condylomata at the muco-cutaneous junctions. (4) Snuffles. (5) Osteochondritis, involving the shafts and epiphyseal junctions of the long bones. (6) The temporary teeth are cut very early, of bad color and liable to a crumbling decay. (7) Irregularities, and hypertrophies of bony development. The nose shows the characteristic deformity in the face, the bridge being so often destroyed by necrosis.

The Differential Diagnosis of Syphilitic Eruptions and Signs in the Skin of Former Syphilis. Fox (*N. Y. Med. Jour.*, Apr. 8, 1899) calls attention to the fact that in nearly every case of cutaneous syphilis, the diagnosis of the disease is written upon the skin. Among the characteristic features of the syphilodermata, he mentions color, absence of itching, and peculiarities of configuration. The early eruptions are symmetrical, occurring on both sides of the body, and have a distinct tendency to grouping in circular patches. As regards the question whether a patient has ever been syphilitic, Fox considers the cicatrices of old lesions found on the body to be of greatest value. A number of smooth, round, white depressed cicatrices, grouped together or in a circle, constitute a permanent record of syphilis, throughout the lifetime of the patient.

The Bacillus Icteroides Confirmed. Wasdin and Geddings, of the Marine Hospital Service, detailed November 8, 1897, to investigate in Havana the nature of yellow fever, have sent in a report confirming the claim of Sanarelli that the bacillus icteroides is the cause of yellow fever. They determined that infection occurred through the respiratory tract, the bacilli first colonizing in the lungs. By placing experimental animals under natural conditions of infection, it was also discovered that Sanarelli's bacillus had a natural specificity that was, moreover, not shown by the bacillus X of Sternburg, the bacillus of Havelburg, or the bacillus coli communis. As the organism has been found to be very susceptibile to dehydration but not to cold, the cessation of yellow fever epidemics in cold weather is attributed by the Commission to the lessened humidity usually accompanying the cold weather.

GYNECOLOGY.

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The Use of Parotid-Gland Extract in the Treatment of Ovarian Disease. Mallett (*N. Y. Med. Jour.*, Aug. 26, 1899), having treated 20 cases of ovarian disease with parotid-gland extract, summarizes the results of his experience as follows: (1) It has seemed to relieve the pains of dysmenorrhea in all cases, without regard to the supposed cause or pathological condition present, to a greater extent than any of the numerous so-called uterine sedatives, all of which he has used. (2) It relieves those dull, aching pains referred to the back and ovarian regions, usually designated by those familiar though vague and unsatisfying terms, reflex pains, ovarian neuralgia, etc. (3) Menstruation, when deranged, seems to become more regular as to periodicity, less in amount, and shorter in duration. (4) During its exhibition, pelvic exudate seems to soften and become absorbed more rapidly under abdomino-pelvic massage. (5) The general health, strength, and spirits seem to improve during its use, and those dull headaches which constitute such a persistent and annoying symptom in these cases are almost invariably relieved, and in some disappear entirely. (6) The only contraindication that he has thus far met with to its use has been in cases of the artificial climacteric (following double salpingo-oophorectomies), in which cases the flashes of heat and cold were made distinctly more frequent and severe.

Saline Irrigation in Abdominal Operations. Hawkins-Ambler, of the Samaritan Hospital, Liverpool (*Brit. Gyn. Jour.*, Feb., 1899), discusses in detail the use of saline irrigation in abdominal operations, and says, in conclusion, that it is nearly always harmless, and nearly universally useful if the following precautions be taken in its use: (1) Use rather normal saline solution than plain hot water. (2) The temperature of the fluid should be little above blood heat, unless in cases of severe hemorrhage, when irrigation should be confined to the affected area and the stream shut off as far as possible from viscera not implicated. (3) Avoid irrigation in septic cases. (4) It should not be too prolonged, since a sodden peritoneum is likely to suffer damage as an absorbing agent, if it be not irritated into such a suspension of this function that blood and plasma might be left unabsorbed for a dangerously long period. (5) Where not

required for cleansing purposes or as a hemostatic, equally good or better results will be obtained by pouring into the abdomen a quantity of normal sterilized saline solution, or by injecting it into the rectum.

Epithelioma of the Urethra in a Female. David (*Jour. des Sci. Med. de Lille*) reports a case of this disease successfully treated by Prof. Duret in the Hospital of Lille, which the patient entered March 6, 1899, suffering very severe pain in the base of the bladder. Micturition had been impossible for three days, but catheterization, though difficult, relieved the pain somewhat. The next day a careful examination disclosed an epitheliomatous ulceration beginning below the clitoris and extending backward to within 2 or 3 cm. of the uterine neck. It seemed that all the middle half of the vulvar commissure and two-thirds of the anterior wall of the vagina were involved. In the midst of this large, thick, hard ulcer, in the anterior vaginal wall there existed a fissure through which the catheter penetrated the bladder. The diagnosis of epithelioma of the urethra was made, and a radical intervention at once decided upon, the operation being performed some days later. The surgeon made an elliptical incision in the postero-inferior cavity, of which the middle part was below the clitoris while the extremities passed the limits of the neoplasm on both sides of the labia majora. Then he incised successively all the tissues level with the pubic arch, which permitted a detachment of the anterior portion of the urethra. Seizing all these with the clamps of Museux, it was easy with the forefinger to detach and draw forward the organ and thus determine the extent of the diseased tissue. He next cut the urethra even with the neoplasm in the vicinity of the neck of the bladder, and continuing the dissection below so as to separate the anterior vaginal wall from its vesical connections, he excised the degenerated part about 2 cm. from the vesical neck and removed the entire epithelioma. By using the finger it was found there remained about a fourth part of the posterior urethral canal. This was drawn forward under the pubis and held in place with 3 or 4 silk sutures. To this was sutured the mucous membrane of the vestibule and labia minora. What remained of the vaginal wall was sutured under the circumference of the urethra, the latter being thus directly joined to the mucous membrane of the vagina and vestibule. A catheter was allowed to remain and the ordinary precautions were taken. The sutures were removed on the ninth day and the catheter on the fourteenth. The patient left the hospital some days after, very well satisfied with her condition, being able to retain the urine about 4 hours. The treatment, while it relieved the intense pain, gave a scarce hoped-for result, since the ablation was complete. This radical treatment is considered much preferable to any palliative means, such as caustics, which give little or no good results. The method of Zweifel, which closes the urethral orifice and creates an artificial urethra under the pubis, is very complicated and only facilitates micturition without preventing the progress of the disease; but the operation of Melchiort employed in this case is superior in that it permits the easy and complete excision of the neoplasm.

OBSTETRICS.

UNDER THE CHARGE OF

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ASSISTED BY

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Rupture of the Intestine in the Newly-Born. Ciechanowski (*Vrtljschr. f. gerichtl. Med.,* Berlin, Oct., 1898) reports a case in which there was a rupture of the transverse colon in a newly born child. The mother was healthy and a 3-para. The vertex presented and the child was born with a single severe pain. The child died with symptoms of peritonitis after 4 days. Several stools were passed during this time. After death there was found a rupture of the transverse colon on the left side. Similar cases have been reported by Browicz, Paltauf, and Zillner. The author is of the opinion that, as there was no external violence in this case, the strong contraction of the uterus upon the highly distended large intestine was the cause of the rupture.

Injuries of the Infantile Eye Occurring During Delivery. Cramer (*Cent. für Gynecol.,* July 8, 1899) describes a case in which the pelvis was ankylosed and premature labor was induced by introducing bougies into the uterus. The colpeurynter was used to dilate the os. The waters escaped largely and there were many vaginal cicatrices present from previous labors, so that it was necessary to apply the forceps and use considerable force. After the delivery, it was found that the child's left eye was bleeding freely. Examination showed a collapsed eyeball and a fracture of the frontal bone just above the eye, the forceps being the cause. With care infection was avoided, and a phthisis bulbi was the only result. The writer attributes the accident to the immature fetal bones, the delivery being at the eighth month, and also to the presentation, which was frontal. He was unable to fracture the orbit of a dead child with the forceps, even though using all his strength.

Syncope after Delivery as an Excuse for the Death of the New-Born Child. Perrin de la Touche (*Rev. Prat. d'Obstet. et de Gynecol.,* June, 1899) reports a case which came under his observation that was undoubtedly true, although, as a rule, unless profuse *post-partum* hemorrhage has occurred, these cases are not believed by the authorities to be true. Many women thus escape punishment for infanticide. The autopsy showed that the child had evidently breathed at first but perished from asphyxia. There were no marks of violence on the child. The woman was all alone when labor set in and she instinctively attempted to enlarge

the vulva with scissors as the perineal stage was reached, on account of the severe pain, and in doing so became unconscious. On regaining her senses, she found the child and placenta between her legs, but dead. The author describes this operation as an "auto-episiotomy."

Tetanus Following Induced Abortion. Turenne (*Ann. de Gynecol.*, June, 1899) writes of a midwife who developed tetanus, although no evidence of a wound could be found until she confessed that she had attempted to produce an abortion on herself by using a catheter and an unsterilized intra-uterine injection. No antiseptic precautions had been used whatsoever, and the disease developed 6 days afterward, death following in 48 hours. Vinay has collected 108 cases of puerperal tetanus, 47 cases of which were connected with induced abortion.

Surgical Treatment of Acute Puerperal Sepsis, with Special Reference to Hysterectomy. Vineberg (*Ann. Gyn. and Ped.*, Vol. XII., No. 9) in a paper with this heading draws the following conclusions: (1) Puerperal sepsis is wound fever, the wound being in the genital canal, and calls for treatment as if it were situated elsewhere, as free drainage, irrigation and removal of any debris or exudate with an instrument. If these means fail, ablation of the diseased organs is indicated. (2) In any case of puerperal sepsis, a thorough search of the whole genital canal should be made, to determine the site of the infection. (3) If this site is in the uterus, curettage, drainage and irrigations are to be used. In 95% of cases this will be all that is necessary. (4) In 5% the symptoms will not yield, and an exploratory laparotomy is then indicated, and total hysterectomy will be necessary in most cases. (5) When collections of pus form and can be reached by vaginal incision or above Poupart's ligaments, no time should be lost in resorting to these measures.

Adherence of Membranes to the Cervix an Important Cause of Tardy Dilatation of the Cervix. Löhlein (*Cent. für Gynecol.*, No. 19) records a number of cases in which this condition has been the cause of delayed first stage of labor. This adherence is due to a cervical or corporeal endometritis. He advises inserting the finger and detaching the membranes from the wall of the cervix and, if necessary, rupturing them. The adherence of the lower pole of the ovum to the cervix delays the unfolding of the cervix and prevents the descent of the bag of waters, and the consequent dilatation of the internal os.

Expression of the Placenta a Modification of Crede's Method. Budberg (*Der Frauenarzt H.* 160) describes a modification of Credé employed in the Dorpat Maternity Hospital in 1,000 cases with success. The right hand is placed over the fundus, thumb to the front and fingers behind, while the left hand grasps the uterus anteriorly, just above the symphysis. During a pain both hands make compression, the maneuver being repeated with each pain if necessary, the hands remaining *in situ*. With the exception of absolute adherence, this method has never failed.

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Our Seashore Sanitaria.

Fortunate are those invalids, whether infants or adults, who, in the recent hot season, were able to enjoy the luxury of a sojourn by the sea. Though invigorating effects may be obtained on the mountain tops and healing virtues found in the springs—to say nothing of the good results usually experienced by a change from the city into the open country anywhere—there are peculiar charms and extraordinary health-restoring influences at the seashore. On the hottest days, especially, when the wind is from the east or south, the change to any of the nearby coast resorts is something magical, and its rapidly beneficial effects upon many of the sick, when first taken there, particularly upon babies with cholera infantum or entero-colitis and convalescents after operations or wasting diseases, is usually no less marvelous. There is not only a sudden transition from a dangerously high temperature to one that, as a rule, is just pleasantly and healthfully warm in the middle of the day, with a drop in the evening to one that demands woolen clothing and heavy bed-covering, but there is a peculiarly tonic virtue in strong sea air, which rarely fails to bring a sharp appetite, in spite of the most debilitated stomach, and often brings refreshing sleep, even to confirmed insomniacs.

Then the seashore, at most places, shares with the country and mountain resorts generally a far greater exemption from pathogenic bacteria than any of the crowded cities or towns inland. The air taken into the lungs is much more nearly aseptic, and this fact is of inestimable advantage to all persons who suffer from depressed vitality. Even in such a populous seaside sanatorium as Atlantic City, since it has been built upon a narrow island, with the open sea in front and bays of salt water behind, and provided with modern sanitation, the crowds that come and go do not seem appreciably to lessen the purity or invigorating character of the air.

Certain invalids who are less dependent upon the luxuries of civilization may do as well, or better, at the newer and smaller health resorts which

abound now all along the coast on both sides of our great country, and doubtless will soon abound on all sides of all our recently acquired island possessions; but for a very large class of delicate patients the thoroughly equipped modern hotels, with skilled physicians, pharmacies, churches, means of diversion, and other conveniences found in the larger resorts, are, in a sense, indispensable.

Another great enjoyment—and, when properly dosed, valuable therapeutic agency—to be had nowhere except at the seashore, is sea bathing. This is a powerful means of restoring health in debilitated persons which many American physicians do not sufficiently appreciate, probably because to bathe in the fashionable way is quite out of the question for nearly all invalids. But there are many persons who, though they cannot stay in the breakers thirty to sixty minutes every day, as the custom is at most seaside resorts, without disastrous results, would be vastly benefited by five-minute baths on alternate days. And there are others still more delicate who might be rapidly cured of their debility by one-minute dips in the surf every day or two. Such very short sea-water baths are often prescribed by physicians at the resorts on the Mediterranean. Along the New Jersey coast the bathing is particularly enjoyable during the latter part of the summer, and even to the end of September.

Tuberculosis and the Spitting Nuisance.

With the beginning of another century, we shall probably see an active campaign begun in all civilized countries against tuberculosis; and the first protective measure will be the suppression of the spitting nuisance. The first steps in this direction have already been taken, and the public press has been educating the masses in a rudimentary way to the truth that spitting is not only filthy and vulgar, but a positive menace to health.

The authorities of several Western cities have recently defeated ordinances making expectoration on sidewalks and in public buildings or vehicles a finable misdemeanor. This is the usual fate of all measures which attack abuses so ancient that they have come to be looked upon as inalienable rights. Were one of the patricians of the Roman Empire in the days of Hadrian, Trajan or the Antonines to come among us, he would be surprised at our vulgarity and that the streets are not full of fighting men and women, for in his time it was an insult to spit in another's presence.

Paris has begun a systematic investigation of tuberculosis from house to house with a view to its limitation, and our own large cities are contemplating similar measures. The first necessary step for the limitation of this and other infections will be the prohibition of public expectoration, a custom filthy and hostile to all hygiene and propriety, and the suppression of which is so manifestly desirable from every consideration.

At its last annual meeting, the Indiana State Medical Society adopted a resolution setting forth the necessity for properly educating the people at large as to the dangers of tubercular infection, and providing to this end literature, warning the public of the nature and danger of its contraction. Judicious literature sent out by State Boards of Health will, in this way, have a far-reaching and potent effect such as nothing else can in calling attention to the simplest matters of public cleanliness.

Talks in Prospect.

Letters are being received from physicians, both in America and Europe, expressing much appreciation of the Talks to General Practitioners, which form so unique a feature of the reorganized INTERNATIONAL. During the coming year this feature will not only be continued, but enlarged. The intention is to make this ultimately include a series of plain, practical discourses on each of the specialties; but the difficulties in the way of carrying this idea out are greater than might be supposed. Many of the best teachers are writing books, and all of them are naturally overburdened with practice, so that they cannot easily spare the time required. And some of those who have the time, literary ability and zeal, and might be secured, have not had the necessary experience to make their talks as authoritative and valuable as would be desirable. We are trying to keep up the standard, and it is expected that a number of the different series will later on be collected and republished in book form.

Prof. Thomas promises for future numbers two further talks on the very important subject of the Treatment of Syphilis, and following these, one or more on the Diagnosis of Obstructive Diseases of the Urethra. Dr. Pyle's interesting talks on forms of eye disease that physicians generally are often obliged to treat will be continued. Prof. Kyle's new work on the nose and throat having been finished and published, he will have more time and energy now for the continuation of his valuable discussions of so much of rhinology and laryngology as is practicable for family physicians.

Prof. Montgomery will shortly contribute further pages from his immense experience in practical gynecology. Dr. W. Wayne Babcock has promised a series of talks on numerous points in the technique of testing for pathogenic micro-organisms. Prof. Ayres will contribute further practical discussions on obstetrics. Prof. Van Harlingen and Dr. Jay F. Schamberg will be heard from again on matters of importance in dermatology. Prof. John Madison Taylor will finish his instructive series of talks on pediatrics. The editor will discuss the diagnosis and treatment of chronic asthenic gastritis and later take up cancer and ulcer of the stomach. The exceedingly important subject of the treatment of displacements of the stomach, as well as of motor insufficiency in its various grades up to gastrectasis or gastric dilatation, will be fully considered also in future numbers.

We hope to have further contributions from Dr. Leonard on surgical subjects and also from Dr. Robin.

A number of new men not hitherto identified with the INTERNATIONAL are expected to be heard from in the way of these practical talks.

EDITORIAL MENTION.

ENGLAND has fortunately a means of assuring the value of antitoxic serum offered for sale by the various laboratories. According to regulations approved by the Laboratories Committee (*Pharm. Jour.,* April 1, 1899) of the Royal College of Surgeons the serum is examined—(*a*) For potency, *i.e.,* for number of antitoxin units per c.c.; (*b*) for any excess of antiseptic; (*c*) for the presence of micro-organisms. It may be sent to the laboratories in bulk, and may there—after being tested and bottled—be labeled with the laboratories' certifying labels. When a batch has been bottled away from the laboratories, the bottles are to be counted and samples selected by the laboratories' assistant, who, after the serum is tested, is to provide labels to be affixed to the bottles and to the cases in which they are contained; these are to be affixed in his presence. The regulations have been drawn up, not with the idea of questioning the *bona fides* of any firm, but simply with the object of affording to the public a guarantee that the testing and certification are not merely nominal.

LINDSAY (*Brit. Med. Jour.,* May 13) used the antistreptococci serum in a recent epidemic of small-pox in the endeavor to lessen the pustulation. Ten c.c. of the serum, administered for three days, certainly appeared to lessen the severity of the toxemia and to be of decided general value.

THE trustees of the University of Pennsylvania have appointed Dr. James Tyson to the professorship of the Theory and Practice of Medicine, the position so long and honorably filled by the late Dr. William Pepper. Dr. John H. Musser and Dr. Alfred Stengel have been made Professors of Clinical Medicine in the same school. All these gentlemen have been distinguished teachers in the University for many years, and all are well known to the medical profession as authors of standard text books.

THE Jefferson Medical College, of Philadelphia, will greet its students this fall in an imposing new building at the northwest corner of Tenth and Walnut Streets. This old and celebrated institution has taken a new lease of life.

BOOK-REVIEWS.

PRACTICAL DIAGNOSIS: THE USE OF SYMPTOMS IN THE DIAGNOSIS OF DISEASE. Fourth edition, revised and enlarged. By Hobart A. Hare, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College of Philadelphia, etc. Illustrated with 205 engravings and 14 colored plates. Philadelphia and New York, Lea Brothers & Co. 1899.

The appearance of a fourth edition of this work within three years will not surprise those best acquainted with it. American physicians possess in a high degree the practical traits which are characteristic of the nation, and therefore so practical a treatise as this by Prof. Hare appeals to them most strongly. The skilled diagnostician, who is thoroughly familiar with the symptoms and physical signs of all the diseases he is called upon to study or treat, has little use for any hand-books on physical diagnosis, and when he does consult one, it is usually to fortify himself regarding some detail or refinement in the signs which the usual methodical treatises, with their pathologic classification of diseases, will furnish him most satisfactorily. But it is sinners, not the righteous, to whom the clergy are especially called to preach; and it is for those little skilled in diagnosis that books on the subject are especially written. For these the arrangement of Prof. Hare's work in classifying by symptoms rather than by diseases is most helpful. Considering the multiplicity and complexity of specialties in medicine in these modern days, putting it entirely beyond the power of any one man to master all, or even to obtain a fair knowledge of all the more important ones, it is remarkable that the author should have succeeded so well in describing not only the symptomatology but also many of the physical signs and chemic and microscopic findings characteristic of diseases of the lungs, heart, liver, stomach, intestines, skin, nervous system, etc. Under the circumstances it is surprising, not that a few trifling slips have been made, but that so very few inaccuracies are discoverable. On page 341 the word *right* was printed inadvertently, no doubt, when *left* was intended in the sentence. "Normally, the greater part of the stomach will be found to the right of the middle line." The accompanying illustrations represent the organ with entire correctness. On page 348, in describing Uffelmann's test for lactic acid, it is stated that a yellow color will be developed in case this acid be present, whereas only a greenish or citron yellow color certainly indicates lactic acid. This is a somewhat important point, since the diagnosis of gastric cancer sometimes turns upon the shade of color obtained by the test, and an ordinary yellow color may be developed without the presence of lactic acid. The chapter on "The Abdomen and the Abdominal Viscera" is, on the whole, singularly accurate and instructive for such a general treatise, and will prove most useful to the general practitioner, though we cannot agree with the recommendation on page 346 that the stomach should be regularly washed out before introducing solutions of soda and tartaric acid separately for the purpose of inflating it preparatory to outlining its boundaries by percussion. One of the marked advantages of this most convenient method of delineating the stomach by inflation and percussion (aided by the splash and, when necessary, by auscultatory percussion and friction as well as by changes of position), is that no tube or other intragastric instrument is necessary, which is important in the case of a consider-

able number of patients in whom it is difficult or impossible or unsafe to introduce such instruments. Though it is often best to examine stomachs when they are at least comparatively empty, this can be arranged by choosing a time long after a meal. We have discussed this book rather more fully and in some of its features more particularly than is customary in the case of a publication no longer new, because it is a work of exceeding value to physicians in active practice and some of the present readers of the INTERNATIONAL are probably unacquainted with it. B. R.

THE NEWER REMEDIES, INCLUDING THEIR SYNONYMS, SOURCES, METHODS OF PREPARATION, TESTS, SOLUBILITIES, INCOMPATIBLES, MEDICINAL PROPERTIES AND DOSES, AS FAR AS KNOWN; TOGETHER WITH SECTIONS ON ORGANO-THERAPEUTIC AGENTS AND INDIFFERENT COMPOUNDS OF IRON. By Virgil Coblentz, A.M., Phar. M., Ph.D., F.C.S., etc.; Professor of Chemistry in the New York College of Pharmacy, etc. Third edition, revised and much enlarged. $1. Philadelphia, P. Blakiston's Son & Co., 1,012 Walnut Street.

With the number of the synthetic remedies alone (to say nothing of the organic extracts and antitoxic preparations) increased from about 800 to some 2,000 in 1899, there is a manifest need for such books as this. Just think of 2,000 new drugs or aggregations of drugs claiming to be synthetic compounds, though many of them are known to be mere loose combinations, all dumped into our Materia Medica since the introduction of Kairin in 1882! Suffering humanity would be entitled to a deeper sympathy than ever before if even the one-tenth part of all these alleged remedies were in general use. Fortunately, they are not, and do not deserve to be. Still, among them there are some really valuable medicines, and a still larger number probably of very useful local applications, including numerous substitutes for iodoform. One does not need to look very deeply into the book to see that it was written by a pharmacist and not by a physician, since prominence is given to the chemistry and mode of preparation of the drugs, with scant information as to their physiologic and therapeutic actions. However, the energetic manufacturers of these endless preparations are not likely to let us remain in ignorance of any of their claimed therapeutic virtues and Dr. Coblentz has told much that every physician needs to know about their solubilities, incompatibles, etc. The appended chapter on "Organo-Therapeutic Agents" or animal extracts, though much less full than would be desirable, is a valuable addition to this edition.

AMERICAN POCKET MEDICAL DICTIONARY. Edited by W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the Hospital of the University of Pennsylvania, Fellow of the American Academy of Medicine, etc. Containing the pronunciation and definition of over 26,000 of the terms used in medicine and the kindred sciences, along with over 60 extensive tables. Second edition, revised, pp. 518. $1.25 net. Philadelphia, W. B. Saunders.

The rapid exhaustion of the first edition of this convenient little volume has caused a second edition to appear within the year. The book has been improved by the correction of certain errors and the insertion of new words. This neat little volume may be cordially endorsed as one of the best of the pocket medical dictionaries.

MEDICAL NEWS AND MISCELLANY.

Alcoholism in St. Petersburgh. Dr. Grigoryew gives the following statistics: From 1886 to 1897 20,508 men and 2,534 women were treated in the various city hospitals for alcoholism. Died, 543 men and 61 women; 1,620 men and 242 women entered the hospital twice; 3 times, 521 men and 69 women; 4 times, 235 men and 32 women; 5 times, 125 men and 14 women; from 6 to 10 times, 225 men and 26 women; 11-15 times, 35 men and 4 women; 16-20 times, 13 men and 1 woman; 21-24 times, 5 men; 30-34-48 times, 1 man. Out of 16,839 alcoholics entering the hospital, principally during acute attack, 5,320 were single, 8,608 married, 983 widowers, 604 girls, 740 married (women), 425 widows. As to religion, 94.9% men and 91.8% women were orthodox-Christians; 3% men and 4.6% women, Catholics; 8.5% men and 3.6% women, Lutherans; 0.2% men, Mohammedan; 0.1%, Jews; 0.3%, sectarian. As to age, 10 boys were from 6 to 10; from 11 to 15, 28 boys and 3 girls; from 16 to 20, 404 men and 36 women; from 21 to 25, 1,349 men and 39 women; from 26 to 30, 2,818 men and 289 women; from 31 to 35, 3,013 men and 252 women; from 36 to 40, 3,062 men and 380 women; from 41 to 45, 1,783 men and 241 women; from 46 to 50, 993 men and 192 women; from 51 to 55, 471 men and 112 women; from 56 to 60, 352 men and 72 women; from 61 to 65, 165 men and 33 women; from 66 to 70, 97 men and 20 women; from 71 to 75, 21 men and 2 women; from 75 to 80, 3 men and 3 women; 81 and over, 2 men.—*Vratch.*

PRESCRIPTIONS BY NOTED THERAPEUTISTS.

SUPERFLUOUS HAIR.

℞ Barii sulph., ... ʒ i p.
Zinci oxidi, ... ʒ iv
M. S. Make paste with water, apply 3 minutes, then wash off.

FOR COARSE HAIR.

℞ Calci Hydrat., ... ℥ i p.
Orpiment, ... ʒ iii
Amyli, ... ℥ i
Aquae calcis, q.s.
M. Ft. Pasta
S. Spread in a thin layer, scraping off the softened hair with a dull blade. Wash off when burning becomes intense and apply soothing ointment.—McCall Anderson.

BURNS.

℞ Salol ..... 120 gr.
Cocain. hydroch., ... 7½ "
Vaselin, ... 900 "
M. S. Apply externally.—Capitan.

BED-SORES.

℞ Zinc sulphat., ... gr. xlv
Lead acetat., ... dr. ss
Tinct. myrrh, ... m. xx.
Vaselin, ... q.s. ad. oz. ij
M. S. For external use.—Freyberger.

BLADDER IRRITABILITY AFTER DELIVERY.

℞ Salol.
Tr. hyoscyam., ... āā dr. ij
Inf. buchu., ...q.s. ad. f.oz. vi.
M. S. Teaspoonful three times a day.—Fothergill.

BRONCHIECTASIS.

℞ Terpinol, ... m. xxx
Olive oil, ... oz. iss
M. Div. in caps. No. 20. S. One every two hours.—Rabow.